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ROYAL COMMISSION ON AGRICULTURE IN INDIA.

Extracts from the Abridged Report so far as it concerns Veterinary Services.

II. The Organisation of Agricultural Research.

We propose that an Imperial Council of Agricultural Research should be constituted, the primary function of which would be to promote, guide and co-ordinate agricultural research throughout India. It would not exercise any administrative control over the Imperial or provincial research institutions. It would be a body to which the Imperial and provincial departments of agriculture could look for guidance in all matters connected with research and to which such research programmes as they might choose would be submitted for criticism and approval. Our object in proposing that such a body should be constituted is to provide provincial governments with an organisation embracing the whole research activities of the country, veterinary as well as agricultural, in which they can feel that they have a real and lively interest. That interest will undoubtedly be greatly accentuated if the Council is entrusted with the administration of funds with which it can supplement provincial activities in the matter of agricultural research. We, therefore, propose that the Council should be entrusted with the administration of a non-lapsing fund of Rs. 50 lakhs to which additions should be made from time to time as financial conditions permit. This is, in our view, the minimum grant which can usefully be made and we have only been able to propose so low a figure on the assumption that provision for the cost of existing institutions and for normal expansion will be met from central or provincial revenues as the case may be. The Council of Agricultural Research and the Agricultural Research Fund should be constituted by an Act of the Imperial Legislature.

The powers of the Council would be regulated by rules issued by the Governor-General in Council in the Department of Education, Health and Lands Cess Act.

One of the most important functions of the Council will be in regard to the training of research workers and part of its funds should be utilised in the provision of research scholarships tenable by students who have given evidence that they are capable of taking full advantage of an opportunity for intensive training in scientific research in agriculture. The Council will act as a clearing house for information and will establish bureaux for crops as well as for animal husbandry, dairying and veterinary matters. It will take over the publication work at present done by the Agricultural Adviser to the Government of India and will arrange for sectional meetings of experts in particular branches of agricultural science. We do not contemplate that the Council should have research stations directly under its control or should have its own staff of experts. It would be for the Council to decide whether a particular piece of research work is of all-India or merely of local importance.

We propose that the Council should consist of 39 members. Three of these would be whole-time members—the Chairman, who should be an experienced administrator with a knowledge, if possible, of Indian conditions, and two eminent scientists qualified to represent respectively the interests of agriculture and animal husbandry. Of the remaining thirty-six members, eight would be nominated by the Government of India, eighteen would represent the provincial, agricultural and veterinary departments, three would represent the Indian universities, two would represent the Indian Central Cotton Committee and the planting community respectively and five would be non-official members nominated by the Council, by reason of their scientific knowledge or their special qualifications, for the approval of the Government of India. The Chairman and the two whole-time members might be appointed for five years and the other members for three years as a general rule. Provision should be made for extending these periods.

We do not consider that it will be necessary for the Council to meet ordinarily more than twice yearly. In view of the great distances in India, more frequent meetings would involve an undesirable degree of interference with the ordinary duties of the great majority of its members. The Council will undoubtedly find it advisable to do much of its work other than that connected with financial matters through sub-committees. These sub-committees should have power to co-opt members from outside the Council to assist them in dealing with special questions. The most suitable headquarters for the Council would be those of the Government of India—Delhi and Simla. The possibility of establishing a Development Commission for India on the lines of that established for Great Britain has naturally occurred to us. The idea is an attractive one, but the limitations imposed by the existing Constitution are such as, in our view, rule any proposal of this kind out of consideration in present conditions.

On the formation of the Council of Agricultural Research, the necessity for an Agricultural Adviser to the Government of India will disappear. This officer is at present the Director of the Pusa Institute. A whole-time Director will be required for Pusa who, in addition to the administrative control of that Institute, will also exercise administrative control over sub-stations now under the Agricultural Adviser, but not over the Imperial Institute of Veterinary Research

at Muktesar for which other arrangements are proposed in Section VII (Chapter IX of the main Report).

V. Animal Husbandry.

Chapter V I I of the Main Report.

The latest statistics give the following figures for the different groups of livestock in British India :—

	Millions.
Cattle and buffaloes	151·0
Sheep and goats	62·5
Horses, mules and donkeys ...	3·2
Camels	0·5

In the 66 Indian States for which statistics are available, there were, in 1924-25, over 36 million cattle and buffaloes, 25 million sheep and goats, one million horses, donkeys and mules, and 262,000 camels. In no country of the world are cattle of more importance than they are in India. Milk, though important, is a secondary consideration. The primary function of the cattle is as draught animals for the plough or the cart. Without the ox, no cultivation would be possible : without the ox, no produce could be transported.

As a rule, the control of livestock improvement should be entrusted to the agricultural departments but we do not recommend any change in the present arrangements in the Punjab where the Hissar farm has been in charge of successive veterinary officers with exceptional qualifications as stock breeders. When veterinary officers show a special aptitude for work on livestock improvement, they should be posted to livestock farms Each major province should have a whole-time livestock expert.

As has already been noted, one of the members of the Council of Agricultural Research will represent the interests of animal husbandry. He should be an authority either in livestock breeding, animal nutrition or veterinary medicine. As he cannot be expected to be equally competent in all these three branches, arrangements should be made for *ad hoc* committees of experts under his chairmanship to deal with special questions.

VII. Diseases of Livestock and their Control.

Chapter IX of the Main Report.

The working capital of the cultivator is mainly represented by his livestock and losses of his cattle from disease press hardly on him. The recorded figures, imperfect though they admittedly are, indicate that the annual number of deaths is very considerable and that rinderpest takes the largest toll. Apart from losses by death, extensive indirect losses occur from the large number of cattle temporarily incapacitated by disease. The more serious diseases of cattle in India are rinderpest, hæmorrhagic septicæmia and foot-and-mouth disease. The general prevalence of these diseases is probably one of the most serious obstacles to the improvement of cattle.

The outstanding problem which faces the civil veterinary departments is thus the control of contagious diseases. The proposals we make in regard to the organisation of the departments, the training of their staff and the research they should undertake hinge on this. They will thus be more readily understood if we discuss the measures necessary to combat disease. We discuss rinderpest in detail because it is the most formidable disease of cattle in India and because the measures necessary to control it are typical of other contagious diseases.

Rinderpest was formerly the most dreaded of all livestock scourges in western countries. It is now non-existent. The inadequacy of the veterinary staff, the prohibitive cost of compensation, combined with prejudices against the destroying of healthy animals which have been in contact with infected ones, render the adoption of western methods impracticable in India. Nor is it possible to isolate and safeguard parts of India by interposing belts of protected country between permanently infected areas and areas from which the adoption of intensive measures has succeeded in eradicating the disease. In these circumstances and for the present, rinderpest and other contagious diseases must be combated by measures designed to protect the individual animal rather than by those which aim at stamping out the source of infection.

The method in general use at present for dealing with rinderpest is inoculation by what is known as the " serum-alone " method. The blood serum of an animal which has recovered from the disease is injected into cattle which it is desired to protect in doses proportionate to their body weight and their breed. Protection lasts only for a brief period. With the dose commonly used an animal is safe for a period of nine to fifteen days. Animals after protection by serum are allowed to mix freely with infected stock in the hope that they may contract a mild form of rinderpest and thus remain permanently immune, for, after recovery, an animal is immune from further attack. This " serum-alone " method is now very largely and effectively used in India in checking outbreaks of rinderpest.

The serum-alone method is, however, subject to the very serious limitation that it confers complete immunity for less than a fortnight, whilst infection may persist in a village for a much longer period. Animals are, therefore, liable to contract disease unless they are re-inoculated and, when they do so, the process is discredited in the eyes of their owners. Re-inoculation, on the other hand, is not only expensive, but when an outbreak is widespread, is often impossible.

The principle on which protected animals are exposed to infection is sound, but it would appear in practice that the chances that the disease will be contracted at the right moment are not good. To ensure infection, therefore, another process known as the serum-simultaneous, or active, method of conferring immunity has been devised. In this process a small quantity (from $\frac{1}{2}$ to 1 c.c.) of virulent blood taken from a diseased animal is injected into the animal at the same time that serum is used. A mild attack of rinderpest follows, the tissues of the animal prepare their own " antibodies," and an immunity which,

in some instances, has been found to be permanent and, in others, to last for about three years is set up. The efficacy of the method has been proved in countries as far apart as Russia, South Africa and the Philippines, while its success in Egypt is of particular interest to India. In India, only one experiment on an intensive scale has so far been made—in the Mysore State. Experience obtained there shows that the serum-simultaneous method is safe, effective and readily accepted by cultivators. Our examination of the evidence available as to the results obtained in India and in other countries from the use of the serum-simultaneous method of inoculation has led us to the conclusion that the introduction of this method is strongly to be recommended and that, indeed, it offers the only hopeful means of combating the ravages of rinderpest. Provided the materials used for inoculation are properly controlled, and the work of inoculation is carried out under the supervision of an experienced veterinary surgeon, careful to guard against such accidents as may occur, the risk involved is so slight that, in view of the great benefits incurred, it should be accepted without hesitation.

We are aware that there are practical difficulties which indicate the probability of some opposition from cultivators to the adoption of this method. In these circumstances, we consider that resort to compulsory inoculation would, at present, be undesirable. Cultivators should be given an opportunity of seeing what inoculation can do to protect their cattle before they are required to accept compulsory measures. To this, we would make one exception. We consider that compulsory inoculation by the simultaneous method should be enforced for all animals kept by milk sellers in large cities.

Outbreaks of rinderpest will supply favourable opportunities for popularising the use of simultaneous inoculation among cultivators and it may be hoped that co-operative breeding societies and cow-keeping societies will also show an example to the cultivator in this matter.

Experience has shown that when charges, however small, are made for inoculation, the extended use of preventive inoculation is greatly checked. We, therefore, recommend that all charges for inoculation, not only against rinderpest but also against other contagious diseases, should be abolished.

Rinderpest, although the most important, is only one of the serious infectious diseases to which Indian livestock are liable. In discussing the measures which should be undertaken to deal with it, sufficient has been said to show that the suppression of epidemics must make large demands on the professional skill, the energy and the judgment of the officers in charge of the operations and that the type of education which such officers should possess is of a different order from that necessary for officers competent to deal with the diseases and injuries that are met with in ordinary veterinary dispensary practice. It will also be evident that to cope successfully with epidemic diseases, the number of officers employed by provincial governments must be largely increased. But as no staff, however large and skilled, can be fully effective unless Government have the power to control the spread of infection, we recommend that a Contagious Diseases of Animals Act should be passed with a view to ensuring a uniform procedure in dealing with contagious diseases. The Act should empower local governments to apply by administrative order to any tract such of its provisions as may be applicable in the circumstances of the case.

The provision of veterinary aid in India is at present totally inadequate. Apart from a few practitioners in the large towns, there are no veterinary surgeons in private practice in India. There are in civil employ about 32 veterinary surgeons in the Indian Veterinary Service and 52 in the provincial services, whilst the number of veterinary inspectors and veterinary assistant surgeons in 1927 was about 1,400. Several of the superior staff are employed in teaching and other duties. Thus some 33 only are available for the control and treatment of disease, and of this small corps of officers, less than one-half are licensed to practise veterinary medicine and surgery through possessing the diploma of the Royal College of Veterinary Surgeons.

These figures sufficiently show the inadequacy of the existing arrangements for controlling contagious diseases and attending to animals suffering from ordinary ailments and from injuries.

Veterinary aid is supplied by permanent dispensaries, by itinerating veterinary assistants or by both methods. We recommend the establishment in each district of a central veterinary hospital having accommodation for in-patients with a number of dispensaries serving sub-divisions of the district. To meet the obvious shortcomings of the single dispensary serving a large tract of country, we recommend that the staff attached to dispensaries should be increased and men sent out to tour in the surrounding districts. The value of most veterinary dispensaries would, in this way, be more than doubled.

Our view is that the control of contagious disease must rest with the provincial Government whose staff, so far as is practicable, should consist of qualified veterinarians. The duty of providing a local veterinary service for treating diseases not scheduled as contagious and dealing with operations and wounds should, when the necessary arrangements can be made, rest with local bodies. It is in the light of this distinction that we proceed to frame our proposals for the future organisation of the veterinary departments.

The first necessity is a very substantial increase of veterinary officers of all grades. The aim should be to provide at least one veterinary assistant surgeon for every 25,000 cattle and one qualified veterinary surgeon for each district, who would have on an average about 600,000 cattle, in addition to other livestock, in the area under his charge. There are 272 districts in British India, so that, on this basis, the number of Provincial Service officers required would be in the neighbourhood of 300, allowing provision for leave reserves. The number of veterinary assistant surgeons would roughly be increased four-

fold, that is, to about 6,000 officers. The co-operation and assistance of Indian States would also be necessary. If their staff were on the same scale, the total number of qualified veterinary surgeons in the employment of Government and that of Indian States, including the staff of the veterinary colleges, and officers employed in supervising duties, would be over 400, and the total number of veterinary assistant surgeons about 7,500.

The organisation which we would therefore propose is as follows. In each province there would be a Chief Veterinary Officer who might be styled Director of Veterinary Services. He would be in administrative control of the veterinary work in the province. The principal of the veterinary college should stand in the same relation to the Director of Veterinary Services in the province as the principal of an agricultural college to the Director of Agriculture. The posts of Director and Principal should be scheduled as selection posts outside the cadre of the provincial veterinary services. It is most important that the holders of these posts should be officers of ability and strong personality and, if need be, the provincial Government should be prepared to recruit an officer from outside the country. The rate of pay attaching to both posts should be reconsidered.

Under the Director of Veterinary Services in each province there would be deputy directors in charge of circles. These officers would be members of the present Indian Veterinary Service or of the new superior provincial veterinary services. Ordinarily vacancies in the latter service will be filled by promotion from members of the existing provincial veterinary services. The duties to be performed by the deputy directors will be responsible and vacancies should be filled by direct recruitment whenever an officer with the requisite abilities is not available from the existing Provincial Service. We suggest that an appropriate scale of pay for the new superior provincial veterinary services would be the existing scale of the Indian Veterinary Service. Underneath these administrative officers would be qualified veterinary surgeons, members of the provincial veterinary services, and the aim should be to provide a qualified veterinary surgeon for each district. The primary duty of these services would be the control of epidemic disease, but it would also be entrusted with the supervision of dispensaries and of touring veterinary assistants. The present scale of pay of the provincial veterinary services, Rs. 250 to Rs. 750 per mensem seems adequate. Beneath this grade would be the subordinate veterinary services consisting of veterinary assistant surgeons in charge of the veterinary dispensaries and the veterinary work in the area commanded. The grade of veterinary inspectors, where it exists, should be abolished when the duties of inspection can be taken over by duly qualified veterinary surgeons. We do not recommend the complete provincialisation of the Veterinary Department. The subordinate veterinary services will continue, as at present, to be lent by Government to local boards. Progress in the direction of transferring greater responsibility to local bodies in veterinary matters, though desirable, will have to be made more gradually. When the complete control of the veterinary work, apart from that connected with the control and prevention of epidemic diseases, is entrusted to them, the assistance given by local governments to their branch of veterinary aid should take the form of a conditional grant-in-aid which might be given on a *pro rata* basis. It should be made a condition of the grant-in-aid that local bodies should look to the provincial veterinary services for advice and inspection and should consult the Director of Veterinary Services in regard to all appointments. In the meantime, local bodies should be consulted in regard to appointments, transfers, promotions, punishments, and dismissals of veterinary assistants employed in their dispensaries.

When the complete control of the veterinary assistant surgeons employed by them passes to the local boards, it will be necessary to create a veterinary reserve corps of selected veterinary assistants to deal with contagious diseases. Experienced veterinary assistants would be selected for membership of this corps by arrangement with the local bodies under which they are working. This, it is hoped, will render it possible to deal effectively with contagious diseases without interfering with the work of the dispensaries.

For the training of veterinary surgeons, that is the provincial veterinary services and the assistant veterinary surgeons, two entirely distinct courses of study are required with different entrance requirements and different classes at all stages. The framing of a suitable curriculum for the training of the latter class in the existing veterinary colleges should be referred to a body of experts. Special prominence should be given in the course to the anatomy and the diseases of cattle. For the provincial veterinary services, that is, for the district veterinary surgeons, the course, which should be settled by conference between the university and veterinary authorities concerned, should extend over a period of five years from matriculation and should end in a degree. We do not recommend the establishment of an all-India veterinary college nor the expansion of the Muktesar Institute as an educational centre. We consider that the most satisfactory method is to train candidates for the provincial veterinary services in all provinces at one of the existing veterinary colleges. The additional expenditure involved in adapting the selected college to undertake higher veterinary education should be met by the Government of India. A short period at Muktesar should be included in or supplement the course at the selected college. We recommend that the course of training for the provincial service should at present be limited to candidates nominated by the Government of India, provincial governments or Indian States, and that they should receive suitable stipends from the authority nominating them during their period of training. Officers on the teaching staff of the veterinary colleges should be expected and encouraged to undertake research work. In order to carry out successfully the training of the

greatly increased number both of veterinary surgeons and assistant surgeons which our proposals require, it is most important that the principals and the staff of the colleges should be picked men. The staff should form part of the new superior provincial veterinary services. As a rule, special recruitment will be necessary, but officers in the ordinary line of the Indian Veterinary Service and the new superior provincial veterinary services should be eligible for appointment. In order to secure officers with the requisite qualifications, it may be necessary to give special pay personal to the individual officer and based on his qualifications and experience.

At present, veterinary research is mainly concentrated at the Imperial Institute of Veterinary Research at Muktesar. We consider that this Institute is all that is required to deal with general problems of veterinary research and that any extension of central research in the immediate future should be provided by such additions to the staff and equipment of Muktesar as the nature of the work contemplated may call for. The Director of the Institute should be selected for his scientific qualifications and should be a man of outstanding position in the profession. As the number of superior posts at Muktesar is so small, we do not consider that any advantage would be gained in present conditions by the formation of a Central Veterinary Service. When an appointment, including that of Director, falls vacant, the officer recruited to fill it should be given a scale of pay in accordance with his special qualifications and experience. In view, however, of the very heavy administrative work which the manufacture of the various sera and vaccines involves, we consider that the Director should have attached to him an officer with administrative experience to relieve him as far as possible of administrative detail. It is also important that an Institute such as Muktesar should have a thoroughly competent staff for secretarial work and estate management. The expenditure on research in Muktesar should be separated as far as possible from that on manufacturing operations and we consider that the provinces and States should share in any profits from the manufacture of sera and vaccines in proportion to their purchases. We recommend that the administrative control of the Muktesar Institute, at present vested in the Agricultural Adviser to the Government of India, should pass to the Director of the Institute, whose position, *vis-a-vis* the Muktesar Institute on the one hand and on the other the Council of Agricultural Research, would be precisely that of the Director of Pusa to his own Institution and to the Council.

The Council of Agricultural Research should have a small Standing Committee to deal with veterinary matters with powers to co-opt members and constitute special committees for particular subjects. In these circumstances, we do not consider that the revival of the Inspector-General of the Civil Veterinary Department or the creation of a post of a Veterinary Adviser to the Government of India is necessary.

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We append an extract—summary of the conclusions and recommendations on veterinary matters extracted from the main report of the Commission.

Extract from and Summary of Chapter IX (Diseases of Livestock and their Control) of the Main Report.

The Relations of the Government of India to the Provinces in Veterinary Matters.

264. It was strongly urged upon us by several expert veterinary witnesses that the Government of India should revive the appointment of Inspector-General, Civil Veterinary Department, which was abolished in 1912, or that, at least, a Veterinary Adviser comparable in status with the Agricultural Adviser should be appointed. We are unable to support this suggestion. We have throughout assumed that the responsibility for controlling contagious diseases must rest with local governments. These diseases are so widespread as to be beyond the scope of "stamping out" measures and it is at the "stamping out" stage that central control becomes highly valuable and indeed, it may be, essential. We have considered whether the duties of Adviser to the Government of India on veterinary matters might not be combined with those of the Director of the Muktesar Institute, as the duties of Agricultural Adviser have been combined with the directorship of the Pusa Institute. We are not in favour of this course. We have pointed out that the Director of Muktesar requires very special qualifications, but these do not include that knowledge of local conditions which would make him a suitable Adviser to the Government of India.

We are of opinion that the necessities of the case can be adequately met under the proposals we make for the organisation of agricultural research in Chapter III. In that chapter, and in Chapter VII, we have recommended that one whole-time member of the Council of Agricultural Research should represent animal husbandry. Should the officer holding this post have a veterinary qualification, he would be available to advise Government on veterinary matters; but whether he were a veterinary surgeon or not, we consider it necessary that there should be a small Standing Committee of the Research Council to deal with veterinary subjects, with the representative of animal husbandry in the chair. One main duty of this Standing Committee would be to secure co-operation between the provinces in controlling contagious diseases. The form of legislation we have recommended is permissive and the measures required to deal with diseases in different conditions may vary. Legitimate differences of opinion may therefore exist between technical officers as to the measures best suited to meet particular emergencies. The whole position points to the need for conference and agreement, not to the carrying out by officers of orders merely because they are orders.

The Standing Committee on Veterinary Subjects which we contemplate would function as a nucleus committee. It should be free to co-opt members for special subjects, and the usual course would be to

form committees after a conference had been held on the subject for which a special committee was required. There are two subjects mentioned in this chapter for which special committees would no doubt be set up without delay. One is the serum-simultaneous campaign we have recommended; the progress of field operations would require very careful study by veterinary experts. The other is veterinary education. A committee on this subject would be required to consider such matters as syllabuses, and negotiations with university authorities in regard to entrance requirements and degrees, and with the Royal College of Veterinary Surgeons and similar bodies in regard to professional qualifications.

We recommend that the administrative control of the Muktesar Institute at present vested in the Agricultural Adviser to the Government of India should pass to the Director of the Institute, whose position, *vis-a-vis* the Muktesar Institute on the one hand and on the other the Council of Agricultural Research, would be precisely that of the Director of Pusa to his own institution and to the Council.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.

265. The conclusions and recommendations in this chapter may be summarised as follows:—

(1) It is impossible to frame any estimate of the losses to agriculture caused by contagious diseases, but they are undoubtedly immense (paragraph 236).

(2) Rinderpest is the most formidable disease of cattle in India (paragraph 237).

(3) Measures for stamping out rinderpest on the lines possible in European countries are not practicable in India (paragraph 237).

(4) Similarly, the time is not yet ripe for the establishment of protective belts on the South African model (paragraph 237)

(5) In present conditions in India, rinderpest and other contagious diseases must be combated by measures aiming at the protection of the individual animal rather than by measures which aim at stamping out the source of infection (paragraph 237).

(6) The serum-simultaneous method of inoculation offers the only hopeful method of combating the ravages of rinderpest and its employment on a large scale is, therefore, strongly recommended (paragraph 240).

(7) With proper safeguards, this method involves a risk so slight, that, in view of the benefits conferred, it should be accepted (paragraph 240).

(8) There are, however, practical difficulties which indicate that some opposition from cultivators to the employment of this method may be anticipated. General resort to compulsory inoculation would, however, be undesirable at present (paragraph 241).

(9) It may be hoped that co-operative breeding societies and milk unions, by agreeing to the immunisation of their cattle, will give a lead to cultivators generally (paragraph 242).

(10) Apart from work amongst such societies, the serum-simultaneous method should be adopted, at the outset, when combating actual outbreaks of rinderpest (paragraph 242).

(11) As the inoculation of all cattle by the serum-simultaneous method is not possible during a widespread outbreak, efforts should be concentrated on protecting the more valuable cattle. The extent to which the serum alone method should be used concurrently with the serum-simultaneous method must be decided by the veterinary officer in charge of the operations (paragraph 242).

(12) All inoculation against disease should be done free of charge (paragraph 243).

(13) Although compulsory inoculation against rinderpest is not recommended generally, it should be enforced for all animals kept by milksellers in large cities (paragraph 244).

(14) An All-India Contagious Diseases of Animals Act should be passed with a view to ensuring a uniform procedure in dealing with contagious diseases (paragraph 246).

(15) In all provinces, the aim should be to provide a veterinary hospital with accommodation for in-patients at district headquarters, and, in addition, a number of dispensaries serving subdivisions of the district. The value of dispensaries would be greatly enhanced if two or more veterinary assistants were attached to them, one or more of whom would be free for touring duties (paragraph 248).

(16) The principle that the stockowner should be responsible for obtaining treatment for sick and wounded animals, where epidemic and public health matters are not involved, is sound, but its enforcement is not practicable or desirable in present conditions (paragraph 249).

(17) The control of measures for treating and preventing the spread of contagious diseases should be regarded as the concern of the provincial governments; the duty of providing a local veterinary service for treating diseases not scheduled as contagious and for dealing with operations and wounds should, when the necessary arrangements can be made, rest with local bodies (paragraph 249).

(18) The present aim should be to provide, on an average, one qualified veterinary surgeon for every district in British India and one veterinary assistant surgeon for each 25,000 cattle (paragraph 250).

(19) The total number of veterinary surgeons required, including provision for Indian States, would be over 400 and of veterinary assistant surgeons over 7,500 (paragraph 250).

(20) The chief veterinary officer in each province should be styled Director of Veterinary Services (paragraph 251).

(21) The Veterinary Department in the Punjab should be independent of the Agricultural Department (paragraph 251).

(22) The Principal of a provincial veterinary college should stand in the same relation to the Director of Veterinary Services as the Principal of an agricultural college to the Director of Agriculture (paragraph 251).

(23) The posts of Director of Veterinary Services, and Principal of a veterinary college, should be

scheduled as selection posts outside the cadre (paragraph 251).

(24) The pay of both posts should be re-examined and a scale fixed commensurate with the responsibilities which will attach to them, if the recommendations made for the extension of veterinary activities are accepted (paragraph 251).

(25) Each province should be divided, for veterinary purposes, into two or three circles, each of which should be in charge of a deputy director who would be a member of the Indian Veterinary Service, so long as any members of this remain in service, or of the new superior provincial veterinary services (paragraph 251).

(26) An appropriate scale of pay for the new superior provincial veterinary services would be the existing scale for the Indian Veterinary Service (paragraph 251).

(27) The qualified veterinary surgeons provided for the districts would constitute the Provincial Veterinary Service (paragraph 251).

(28) The primary duty of this service would be the control of epidemic disease, but it would also be entrusted with the supervision of dispensaries and of touring veterinary assistants (paragraph 251).

(29) The present rate of pay of the provincial veterinary services is suitable for the enlarged service recommended (paragraph 251).

(30) The safeguards recommended in Chapter XIX in regard to the recruitment, discipline and conditions of service of agricultural officers are equally desirable in the case of veterinary officers (paragraph 251).

(31) The grade of veterinary inspectors, where it exists, should be abolished when a sufficient number of fully qualified veterinary surgeons is available. Should the prevalence of disease in a province make this course necessary, veterinary assistant surgeons might be employed under district veterinary surgeons as inspectors (paragraph 252).

(32) The complete provincialisation of the veterinary departments is not recommended (paragraph 252).

(33) The subordinate veterinary services will continue as at present to be mainly employed by local boards (paragraph 252).

(34) The immediate transfer to local boards of complete control over veterinary assistant surgeons employed by them is not recommended. Progress in the direction of transferring greater responsibility to local bodies in veterinary matters can only be made gradually (paragraph 252).

(35) When complete transfer is made, government assistance should take the form of a grant-in-aid, preferably on a *pro rata* basis, which would be made on condition that local bodies should look to the provincial veterinary services for advice and inspection and should consult the Director of Veterinary Services in regard to all appointments (paragraph 252).

(36) In the meantime, local bodies should be consulted in regard to appointments, transfers, promotions punishments and dismissals of veterinary assistant surgeons (paragraph 252).

(37) When complete control over veterinary assistant surgeons has been transferred to local boards, a Veterinary Reserve Corps of selected veterinary assistants should be formed (paragraph 253).

(38) Private effort should be encouraged in every possible way to supplement the efforts of Government and of local bodies to provide veterinary aid (paragraph 254).

(39) For the training of veterinary surgeons and assistant surgeons respectively, two entirely distinct courses of study are required with different entrance requirements and different classes at all stages (paragraph 255).

(40) The framing of a suitable curriculum for training veterinary assistant surgeons should be referred to a body of experts (paragraph 256).

(41) The course for veterinary assistant surgeons should extend over two or three years. Special prominence should be given in the course to the anatomy, physiology, and diseases of cattle (paragraph 256).

(42) The course of study for veterinary surgeons, which should extend over a period of five years from matriculation and should end in a degree, should be settled by conference between the university and veterinary authorities (paragraph 257).

(43) The establishment of an all-India veterinary college is not recommended nor is the expansion of Muktesar as an educational centre (paragraph 258).

(44) At the outset, one of the existing veterinary colleges should be selected for the training of veterinary surgeons, but the training should include or be supplemented by a short period of work at Muktesar (paragraph 258).

(45) The course should be open only to candidates nominated by the Government of India, provincial governments or Indian States (paragraph 258).

(46) The additional expenditure involved in adapting the selected college to undertake higher veterinary education should be met by the Government of India (paragraph 258).

(47) Officers recruited for veterinary education and research should be members of the new superior provincial veterinary services. Where necessary, local governments should be prepared to grant special pay as an addition to the pay on the ordinary time scale. The special pay should be personal to the individual officer and should be based on his qualifications and experience (paragraph 259).

(48) The provincial veterinary college should be the natural centre for research work in the provinces. All senior officers employed in the colleges should be expected and encouraged to undertake investigations in their own special spheres (paragraph 261).

(49) Muktesar is well suited for the prosecution of research into animal disease and a second Imperial Institute of Veterinary Research is not required. In view of its isolation, Government should, however, take all reasonable measures to increase the amenities of life at Muktesar (paragraph 262).

(50) The scientific staff at Muktesar should always be maintained at full strength and the appointments at present vacant should be filled as soon as suitably qualified candidates are available (paragraph 262).

(51) When an appointment at Muktesar, including that of the Director, falls vacant, the officer recruited to fill it should be given a scale of pay commensurate with his special qualifications and experience (paragraph 262).

(52) The Director of the Muktesar Institute should be selected on the ground of scientific qualifications (paragraph 262).

(53) An officer with administrative experience should be attached to the staff of the Muktesar Institute to relieve the Director of administrative work (paragraph 262).

(54) Scientific institutions such as Muktesar should be provided with a thoroughly competent staff for secretarial work and estate management (paragraph 262).

(55) The expenditure on research work at Muktesar should be separated as fully as possible from that on manufacturing operations. Provinces and States should share in any profits from the manufacture of sera and vaccines in proportion to their purchases (paragraph 263).

(56) The revival of the appointment of Inspector-General, Civil Veterinary Department, or the creation of a post of Veterinary Adviser to the Government of India is not recommended (paragraph 264).

(57) A small standing Committee of the Council of Agricultural Research to deal with veterinary matters should be constituted. The chairman of the Committee should be the whole-time member representing animal husbandry on the Council of Agricultural Research (paragraph 264).

(58) This Standing Committee should have the power of co-opting members and of constituting special committees for particular subjects (paragraph 264).

(59) The administrative control of the Muktesar Institute should pass to the Director of the Institute (paragraph 264).

Geographical Distribution of R.C.V.S. Councilmen.

By J. R. Baxter, M.R.C.V.S., Lechlade.

Noting the editorial remark in the *Record* of June 16th, that less than one-third of the members of the Royal College of Veterinary Surgeons took the trouble to vote in the recent Council election, I began to wonder who were the greatest defaulters. One hears occasionally great laments because the country practitioner has not more representatives on the Council, but from a somewhat casual study of the geographical distribution of the Councillors it seems to me that the country practitioner is probably the greatest defaulter at the poll; either so, or he votes for a town representative.

Personally (although I think the one representative of Wales more than deserved re-election) I think we have a wonderful Council of men who have the welfare of every section of the profession at heart and their unselfish work on behalf of the whole profession is beyond praise. *Moral*, "vote and grouse not."

(*Continued at foot of next column*).

Should the Government Subsidise the Tuberculin Testing of Cattle? *

By E. H. Pratt, M.R.C.V.S., Northallerton.

At our last meeting I brought forward the question of Government aid for farmers who wished to try and clear their herds of tuberculosis. Since then our President has asked me to bring the matter before you at this meeting, as it is a subject which he thinks will be of general interest. I am, therefore, pleased to do so, hoping that it will give rise to a good discussion. I am also anxious that it may lead to some practical good being done towards helping to exterminate this scourge of our cattle and thereby give to our clients some real help in this trying time through which they are passing.

The Tuberculosis Order has been talked and written about as if it were designed to stamp out tuberculosis; and it has been criticised for its shortcomings in this respect.

The simple slaughtering of cattle in an advanced stage of the disease will never stamp out tuberculosis from our herds, although I do think that, as an educational measure, it may be worked to do a great deal of good, by preparing the way for some method being accepted and put into force with the object of eradication in view.

Having been employed in helping to carry out the Tuberculosis Order since its introduction, I have been most forcibly struck with the great waste of cattle and financial loss incurred by our stockowners through this disease.

Estimating that we have 3,000,000 cows in Great Britain, it is safe to say that 5 per cent. of them or their value is lost to their owners every year through tuberculosis. If we value this 5 per cent. at £20 per head, we get the sum of £3,000,000 lost to agriculturists every year through this disease, or at the low value of £15 per head it would be two and a half millions—surely a sum worth trying to save.

In addition to this, we must remember that the butchers who slaughter cows will probably lose 5 per cent. of those which they kill owing to their being condemned as tuberculous and unfit for human food. There is also a very serious loss caused to butchers by having large numbers of pigs condemned because they are found diseased.

But, in reckoning the damage done by this disease, we must not forget the loss of life and the suffering inflicted on our children by bovine tuberculosis.

(*Continued from previous column*).

England, with 40 counties, has 9 only represented, and of these representatives 12 are bunched in London and Middlesex, 6 in Lancashire, 3 in Yorkshire, 2 in Berkshire and 1 each in Shropshire, Northants., Cambs., Oxford and Wiltshire.

Scotland. Three representatives only (all colleges).

Ireland. One only (college).

Wales. Not represented.

Reckoning Councilmen from Oswestry, Kettering, Swindon and Reading as country representatives, we have left 10 college and research, 8 large towns, 7 London practitioners and 3 whole-time officers.

* Paper presented to the Yorkshire Division N.V.M.A. at Leeds, on 27th April, 1928.

If you accept this as a fair statement of the loss and damage done by bovine tuberculosis you will surely agree that it is time something more should be done to prevent it than is being done at the present time.

Having thought seriously about the matter, I have come to the conclusion that an experiment should be made with the aid of tuberculin to eradicate the disease from our herds.

We know that tuberculosis can be and has been eradicated from certain herds by its use.

We also know that the method is expensive, that it requires patience and perseverance on the part of those who carry it out to a successful issue. But we have every confidence in saying that a tuberculosis-free herd will be much more profitable to its owner than one which is infected.

Therefore, I would suggest that it is the duty of the Government to help to attain this object, which would be beneficial to the agricultural community and to the public at large. I do not propose the adoption of a compulsory scheme, but would make it an optional one.

When the examination of stallions was first introduced it was not compulsory. The owner who submitted his horse to a veterinary examination had it examined and a certificate given free of charge. Now he is willing to pay some of the cost.

The same thing would happen if the Government would inaugurate a carefully thought out scheme of free testing of herds with tuberculin—the owner, on his part, to contract to undertake and carry out a reasonable method of isolation of reactors and of their disposal, so that they would no longer be a danger to other animals or to human beings.

I do believe that in segregation we have the best, the most practical and the most economical method of dealing with the disease, but I fail to see how it can be carried out without the aid of the tuberculin test.

You may ask, if the farmer does get help to have his stock tested, will the loss on getting rid of reactors, the replacing them with non-reactors and other expenses prove so costly as to make it not worth his while from an economical point of view? I do not think so, because he would get the benefit of healthier stock with fewer fatalities. He would find a better market for his stock. At present there appears to be no ready supply of tuberculin-tested cattle. If a buyer wants tuberculin-tested cows he has to arrange and pay for them being tested. It takes a considerable time and expense to find the animals he wants which will pass the test. There is no doubt that the working of the Milk and Dairies Order and the Tuberculosis Order will open the eyes of stockowners to the seriousness of this disease, and that there will spring up a demand for tested cows. Therefore, a stockowner who has a tuberculosis-free herd will find a ready and profitable sale for his animals.

I mentioned at our last meeting that at the disposal sale of a tuberculosis-free herd of dairy cows those present were surprised at the good prices realised. I think that this instance shows the trend of events. If it is going to be a paying proposition one might say, why appeal to the Government for assistance? Because it requires demonstrating on a large scale and bringing forcibly before our stockowners. Private initiation is too slow. The need is pressing, both for the benefit of agriculture and in the interest of public health.

If a scheme of this kind was put into practice it would be necessary to decide which method of testing should be adopted.

A plan for dealing with the reactors would have to be brought out. It would have to be arranged whether the reactors or non-reactors should be branded or marked in some way, and on what conditions certificates of freedom from the disease should be given.

Into these and other conditions which would regulate the scheme I do not propose to go. I prefer first to have the opinion of this meeting and hear if the idea is considered practical and likely to prove beneficial.

There is one thing which may be argued against a plan of this kind, namely, that we should wait and see how the method of vaccination works out.

I have faith that vaccination will prove beneficial. But that does not in the least affect my view that we should push on with tuberculin testing. It should rather act as a stimulus to us to get on with it and so prepare the way for vaccination. By removing the large percentage of reactors it would give vaccination a better chance. I do not think that it is a wise policy to put great stress on any protective method. In a campaign against a disease of this kind I would prefer to root out by every known method any diseased animal, trusting in protective measures against any occult infection.

By such measures success would be attained both more rapidly and with much more certainty.

Discussion.

Opening a long and interesting discussion, Major Rabagliati said they were all grateful to Mr. Pratt for bringing the subject forward. Even if nothing came of it, it was very interesting to look into the question and see what perhaps might be done, and also to note the many difficulties which must be ahead of any such scheme.

The question of the eradication of tuberculosis was a very large one, but he hardly thought the Government would be prepared to dabble in it, as it really only would be dabbling in it by giving a certain stimulus to testing. Mr. Pratt had given a general idea of the scheme, but no details, which would probably be the essential factors for the success or otherwise of the scheme. They all agreed there was an enormous loss, and no doubt public health work, with the Tuberculosis Order, was opening the minds of farmers to the question, and many of them were very interested. But to come down finally to the hard question of expense, that was probably going to be a great bone of contention. It would be no earthly use the Government giving grants for the testing of cattle unless the farmer was prepared to carry on for a considerable number of years with a tubercle-free herd and to breed his own stock. The question of what should be done with reacting cows had been discussed by almost all the Divisions and the general concensus of opinion was that something should be done to mark those cows, but they did not think the time was ripe, and nobody had been able to evolve a satisfactory scheme. He did not see anything immoral, at the present time, in a private individual who tested cattle selling a reactor, because a cow that reacted to the test was no worse after than before the test: it was not like selling a "screw" cow. If the Government were to subsidise testing, they could not allow a reacting cow to be sold promiscuously, and the cost was going to frighten people. They all desired to see an increase in tuberculin testing, but the conclusion to which many members of the profession had come was that no dealer would allow them

to test half a dozen cows and take two of them, if he knew they were going to brand the other four and he would get a much less price for them. If the Government were going to test, they must either slaughter or brand reactors.

He considered that Mr. Pratt had put his loss of five per cent. from tuberculosis too low and that the loss was very much greater. Mr. Pratt was perfectly right in drawing attention to the great importance of the question, and personally he would be very glad to think the Government were doing something, but no doubt they would say: "We have relieved the farmers of their rates; they can do any tuberculin testing themselves."

Colonel BOWES said he was very glad the subject had been opened up, but it bristled with difficulties, and though it would be a good thing there would be extreme difficulty in getting any action taken. He gave his experiences of the University herd at Garforth. The first testing was in 1908 and yielded about 66 per cent. of reactors, which was an alarming state of affairs. It was impossible to deal with it in any drastic fashion, but they adopted a system of isolation which was successful up to a point. In a very few years the percentage of reactors was reduced from 66 to 30, which might not be considered a good result, but no cow was sold because she was a reactor, one being kept for about five years and bred from repeatedly. Consequently the reduction was a slow process, but later it was decided that the time had arrived when they could weed out the reactors every year, and very soon they had a tubercle-free herd.

He agreed with Major Rabagliati that it was essential that a farmer should breed his own stock to have a tubercle-free herd, and it could not be done without a lot of trouble by buying in cattle. It was impossible to rely on a first subcutaneous test, as the cow might recently have been tested; in other words, she might have been doped, though not necessarily wilfully. It was only later on that a truer test could be obtained.

For a certain number of years, as far as could be done, all cows from Garforth were followed and *post-mortemed*, and, generally speaking, they found no non-reactor showing signs of tuberculosis lesions, though in the case of reactors they often did.

Personally, he was very interested in vaccination and was looking forward to vaccination solving their difficulties in a more satisfactory way than testing and weeding out. Vaccination was in an experimental stage, but the results were promising. It would, however, be some years before it could prove itself.

Mr. BOWMAN thought Mr. Pratt's scheme was impracticable. If the Government could do anything to assist the farmer, there was none more badly needed assistance, and what with one thing and another many of them were unable to carry on. If vaccination proved successful he considered that would be the best and cheapest method to adopt, and what the farmer could afford.

Mr. CLARKSON was in agreement with Mr. Pratt about the scheme being ideal, but he thought something might be done in the way of voluntary effort. Any man who set out to get a tubercle-free herd was worthy of support, Government or otherwise. Mr. Pratt had made a strong point of the farmer being able to obtain higher prices for non-reactors, but if a scheme such as suggested was evolved some restrictions should be placed on selling.

Mr. DIXON said that the question of tuberculosis was chiefly concerned with dairy cows. He had reason for saying that tuberculin testing was neither such a tremendous job nor such an expensive job as was generally supposed. The losses to the farmer were greatly exaggerated, and in fact the farmer usually succeeded in passing the greater portion of his loss on to the butcher. If tuberculin testing were established on a national basis, the first thing to be done was to educate the dairy farmer to his own responsibilities and his own interests. At present he failed to see the slightest hope, desire or wish on the part of the dairy farmers in general to combat tuberculosis, and they appeared to be perfectly content to let the disease go on unchecked.

In Berkshire and in the neighbourhood of Reading there were tubercle-free herds in abundance, and the farmers did not complain about the costs of maintenance. They were delighted to be able to get the enhanced prices for their milk.

He considered to get rid of tuberculosis amongst dairy cows by tuberculin testing was entirely impracticable. If the Government took the responsibility of getting rid of the disease by slaughter there would immediately be a milk famine, as more than 50 per cent. of dairy cows would react to tuberculin. That was a serious matter to the dairy farmer and had its reflex on the breeding farmer, but was of far more importance to public health, and that point of view should be borne in mind. The Tuberculosis Order was a very feeble attempt and only touched the fringe of the question, but it would clear the country of the most obviously dangerous animals, provided the farmer would do his share, which he doubted. The only way to tackle the question was by instituting regular routine systematic shed-to-shed inspection by county and urban authorities, when tuberculosis cases would come to light and be dealt with properly. A lot of cattle were being killed now under the Tuberculosis Order, but not a tenth part of the numbers being dealt with by the butcher in the ordinary course of trade. In spite of the Tuberculosis Order being in operation throughout the country, the slaughterhouses and the pigsties were receiving their regular quota of advanced tuberculosis every week, and such would remain the case until the farmer awoke to a sense of his responsibilities and his own interests.

Mr. CAMPBELL said that the first thing to be asked of the Government was the control of tuberculosis, as the herds could not be freed from tuberculosis, from an economic point of view, until it was controlled. He was of opinion that if tuberculin testing were applied to stock bulls it would go a long way towards the freeing of the herds from tuberculosis, as he thought the bull had a good deal to do with the spread of the disease. He had proved this in clean herds, and he gave instances.

He failed to agree with Mr. Dixon that the butcher had to stand the brunt of the loss, and the farmer's loss was very great. Butchers had nothing to grumble at in the way of the prices they had paid for the last two years for their cattle.

How could they expect farmers to keep their cows free from disease and attempt to get a tubercle-free herd so long as the price of milk was so low? If the Government would guarantee a better price for milk, the farmers would find the clean cows to supply it. Apart from hospitals, there was little demand for tuberculin-tested milk, particularly in the country districts.

Mr. ROBINSON said he was surprised to hear Major Rabagliati state that he did not think it was wrong for a farmer to sell a reactor. The low price of milk was the farmer's own fault, and the idea of the Government controlling the price would not hold water. The farmers had the milk in their own hands and if they agreed on a certain price they could get it.

Mr. VINE agreed with Mr. Campbell's idea of testing bulls and he was confident that in many cases tuberculosis had been spread through the bull, though in what way he did not know.

Mr. CLARKSON said that the statement that the bull transmitted the disease rather upset one's ideas and he could not let it go unchallenged. He was prepared to admit that the bull might transmit a predisposition to tuberculosis, but beyond that he would not go. It was proved beyond question that if a calf was immediately removed from a tuberculous cow and fed on clean milk, the calf would be healthy. The same had been proved repeatedly in human practice.

Mr. BOWMAN agreed, and Colonel BOWES said that at Garforth they never had the least difficulty in rearing tubercle-free calves from reacting cows when they were immediately removed from the mother and put on to a non-reacting cow's milk or pasteurised milk.

Mr. McGregor expressed his sympathy with the proposed scheme but was afraid very little could be hoped for in the way of Government help, and they would probably have to look more to vaccination. With regard to the bull transmitting tuberculosis, his experience was not great but all his teaching led him to think there could be very little in the idea.

Major Rabagliati said he did not want to be misunderstood as to what he said about selling reactors. As things were, with an enormous number of tuberculous cattle about, he did not think it could be said that a man was doing an immoral act in selling a reactor and saying nothing about it.

Replying to the discussion, Mr. Pratt said he was very pleased at the way in which his paper had been received and the discussion to which it had led. He was aware there was little likelihood of getting anything from the Government at the present time, but he thought it was worth while keeping before them that it was their duty to do something towards eradicating the disease.

There seemed to be a difference of opinion as to who bore the loss, but it was evident the farmer was having a very serious share of it.

To reply adequately to the criticism and discussion would mean practically a new paper, because it was asked how one would deal with the various phases of the scheme. He had not suggested a compulsory scheme, as he did not think it was practicable, but he did think there were many breeding herds in the country which were practically sound, and if the owners could be helped to have their cattle tested and dealt with by a method of isolation, so that they would do no harm to other cattle, it would help to solve the problem. If farmers breeding stock had tubercle-free herds, then there would be a place where sound stock could be bought, and the farmer could get on with the business of clearing his herd much better and more cheaply than if he had to go to the expense of buying cows in, testing them and turning them out again.

Injuries of the Withers.*

By Captain George W. Brower,
U.S. Army Veterinary Corps.

Fistula of the withers is one of the most difficult and disagreeable conditions which is met with in private practice. Veterinary surgeons have been studying this disease for ages, and have, through knowledge gained by experience, improved the methods of treatment to the extent that many cases can now be cured although generally after months of suffering and idleness. An eminent veterinarian states that there is no condition in veterinary equine surgery that is more frequently encountered in country practice than that group of diseases spoken of as "fistula of the withers." In the opinion of another well-known authority the cause of fistula is immaterial, and the fact that it exists is all sufficient, but with this latter view the writer begs to differ.

No attempt will be made here to describe a new and better method of curing fistula. Enough, I believe, has been set forth for the time being upon that particular subject and we should direct our efforts more particularly toward the prevention of this condition.

In the great majority of cases, fistula of the withers is the result of ignorance or neglect on the part of the horse owner or attendant. As this condition is usually the sequel of abrasions of the skin and contusions of the tissues in the region of the withers, the veterinarian should consider it his duty to instruct his clients as to the serious results which may occur through their failure to procure professional service in the early treatment of these apparently slight or moderate injuries to the withers. Then too, as these wounds are often the result of the use of ill-fitting equipment, such as collars or saddles, it becomes his further duty to demonstrate the proper adjustment and use of horse equipment.

In fitting a collar to a horse great care should be exercised in observing that the collar lies on the neck without pinching, and particular attention should be paid to this matter in the case of animals used as wheelers, or in other words those the duty of which it is to guide or in some measure support the pole. A common cause of injury to the withers is the great strain thrown upon the neck in stopping a vehicle when the brakes are not properly applied. The use of a collar pad of felt or some other soft material is quite universal among farm animals and other private draft animals, and this in some respects may be warranted or even necessary where it is not possible to provide a properly-fitted collar. Over the withers and particularly from the third to the fifth thoracic spine, there is very little soft tissue; in fact, the supra-spinous bursa found in this locality constitutes the only cushion interposed between the bone and skin. Undue pressure at this point will invariably result in a contusion of the withers. Therefore, there is no doubt but that the soft collar pad may play an important part in preventing bruises. However, if great care is exercised in selecting and fitting the collar, the weight is distributed properly and the pad becomes superfluous.

In prescribing treatment for injuries to the withers, one must necessarily be guided by the extent and amount of damage which has been done. In the first place it is advisable to discontinue the use of the animal at once. In case the injury is a slight abrasion only, and necessity demands, the animal may be continued in service while undergoing treatment, but it is a very dangerous procedure in the case of a bruise of the withers to allow the continuance of pressure, even that occasioned by the use of a padded and well-fitted collar. Early and careful treatment of bruised withers will prevent an untold amount of serious trouble.

In the treatment of abrasions of the withers when an animal is to be continued in harness, the writer has found that an ointment composed of the following ingredients produces excellent results: Powdered copper sulphate, 25 grammes; powdered alum, 10 grammes; methylene blue, 1·5 grammes; petrolatum, 450 grammes, and paraffin, 25 grammes. When animals are not to be continued in use, one will find the following preparation efficacious: Linseed oil, 1,000 c.c.; oil of turpentine, 1,000 c.c.; fish oil, 1,000 c.c.; Canada balsam, 60 c.c., and sulphuric acid, 30 c.c. This preparation should be made in an open container. The sulphuric acid must be added to the other ingredients very slowly, stirring the mixture during the process. The above formulæ are also recommended for use in the treatment of wounds of other parts of the body.

Contusions must be given prompt and active treatment upon discovery. The application of crushed ice in the form of a pack has proved to be most efficacious in cases discovered within twenty-four to thirty hours. This treatment can be continued for several hours, then followed with white lotion. Where ice is not available, irrigations with

*Reproduced from U.S. Army Corps *Veterinary Bulletin*, Vol. XXI, No. 5.

cold water are substituted, followed of course by the white lotion pack. In the treatment of contusions of longer standing, where active inflammation is present, antiphlogistic treatment is indicated. Fomentations of hot antiphlogistine or linseed meal are very good but the writer considers the application of hot water the best. If the above treatment is carried out faithfully, it is firmly believed that fistulous withers will be prevented. The formation of an abscess may follow this treatment in some cases despite all one can do, but this is not usually serious, since, through the fomentation of the parts and the softening of the tissues, relief may be imparted to the affected area by surgical means before any serious damage has had time to develop.

Fistula of the withers is not of common occurrence among animals of the Army and this is due primarily to the strenuous policy of prevention observed by the Army Veterinary Corps. Only twenty-two cases of fistula of all varieties occurred last year among an average of 41,232 animals in the service of the Army, and of these twenty-two cases only one mule was affected. There were four deaths in horses from this disease, and an average of 69·68 days lost from duty for each case.

In conclusion, shall we repeat that an ounce of prevention is worth a pound of cure? The annual report of the Surgeon General, U.S. Army, substantiates the statement that fistula of the withers is being prevented.

Artificial Production of a Fowl Tumour.

Ever since Gye and Barnard put forward their theory of the cancer "virus," a great deal of attention has been directed to the study of the Rous sarcoma of fowls, on which their argument wholly depended, and especially to the nature of the filterable extract of these tumours. Gye claimed to have demonstrated that the extract contained two factors—the "virus" and the "accessory chemical factor"—neither of which was efficacious without the other; but the weight of scientific opinion has been unfavourable to this claim. It has even been doubted if the active principle of the fowl-tumour extract is of the nature of a virus, and Carrel has asserted that he has been able to produce tumours indistinguishable from the Rous sarcoma by injecting into fowls the pulp of chick embryos mixed with very weak solutions of arsenious acid or of indol. Carrel's claims in turn have been disputed by others, but Brebner* states that he has successfully repeated these experiments. But he has gone further. Impressed by the discovery of Warburg that tumours, placentæ, and embryonic tissues have, in contradistinction to most other tissues, a greater glycolytic than respiratory property, he was impelled to try if the combination of placental extract and chick embryo pulp would have a similar effect to the Rous sarcoma extract. To this end he removed two placentæ from a rabbit at or about full term, minced them finely, and mixed with them 10 c.cm. of saline. The mixture, after standing for thirty minutes, was centrifugalised, and the supernatant fluid added to the minced pulp of three eight-day-old chick embryos. This emulsion was injected into the pectoral muscles of two fowls. One of these fowls had developed a nodule by the twentieth day, and by the end of the forty-sixth day, when the bird died, it had a large nodule on the left side and a smaller one on the right. On dissection it was found that the tumours—grey-white in colour, firm in consistency, not very vascular—were actively invading the muscle substances. They showed no trace of embryonic tissue, such as cartilage, bone, or epithelial structures, as one would expect to obtain from the growth of the material

(Continued at foot of next column.)

* *Canadian Med. Assoc. Journ.*, April, 1928.

The Veterinary Record.
14th July, 1928.

VETERINARY SERVICES IN INDIA.

As will be seen from our pages of this week, the proceedings of the Royal Commission on Agriculture in India are now published, and a summary of conclusions and recommendations is quoted. In the main these are as follows:—

(1) The provision of a Head to the Civil Veterinary Services has not been agreed to, but that the functions of a Head will be undertaken by a Sub-Committee of the proposed Imperial Agricultural Research Council, the Chairman of such Sub-Committee being a whole-time officer responsible for animal husbandry, who may or may not have a veterinary qualification.

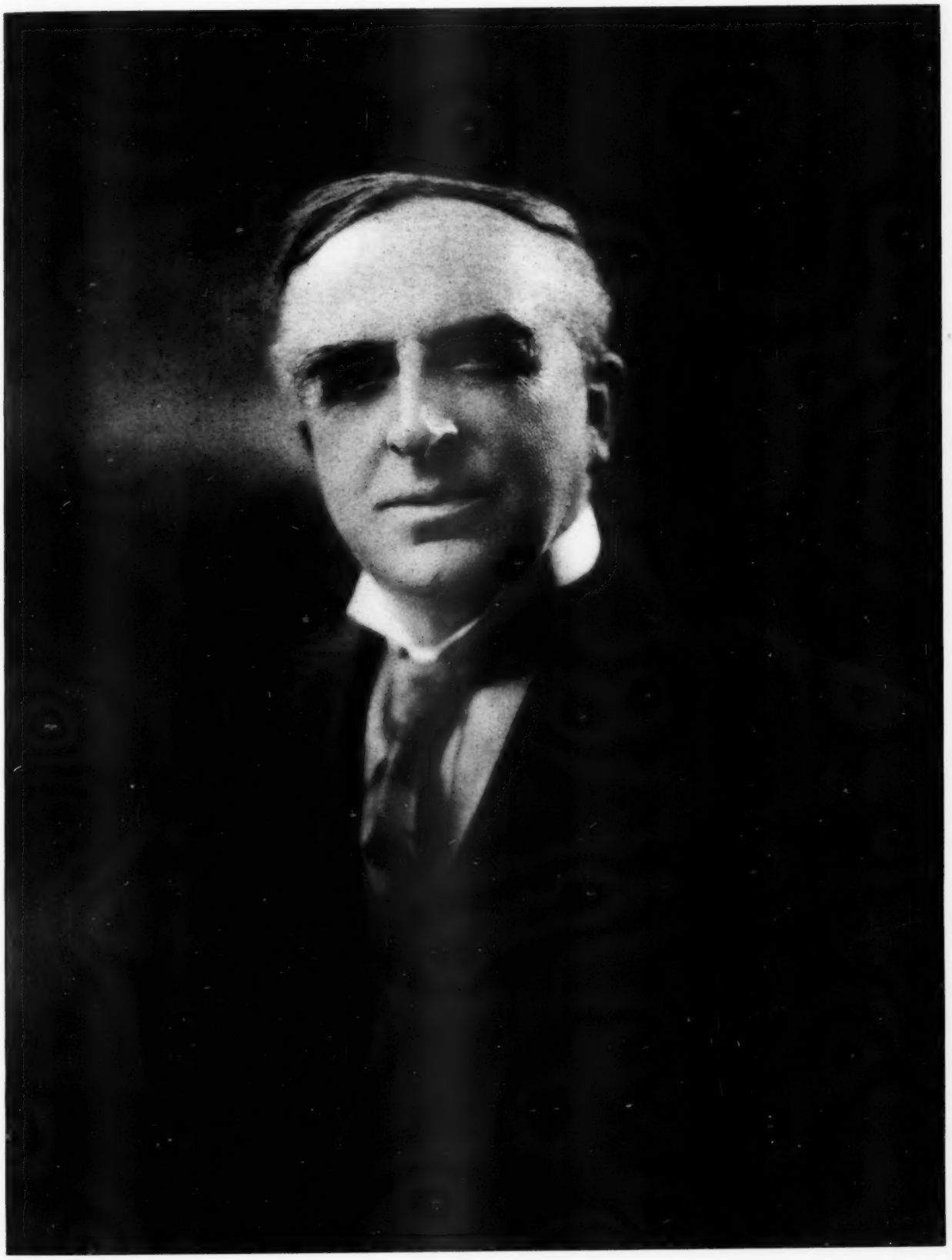
(2) Veterinary services being a "transferred subject," a Director of Veterinary Services will be appointed to each Province; each Province will be divided into Districts, each of which will have a veterinary surgeon in charge, who shall either possess a British qualification or be a graduate of a selected Indian veterinary college, teaching up to a five years' standard of veterinary education, and with the qualification of a university degree. The total number of these superior appointments will amount to approximately 400, including those in the employ of Indian States.

(3) A very large increase of the subordinate veterinary assistant surgeons, with a three years' course of training, is recommended, the total number to approximate 7,500, including requirements of Indian States.

(4) To implement the better control of contagious animal disease in India, on which animal

(Continued from previous column.)

injected. There were numerous metastases, especially in the lungs. The microscopic appearances were those of a sarcoma in which large cells predominated, with abundant cytoplasm and somewhat pale-staining reticulated nuclei—cells which were probably of mesoblastic origin—but the picture was by no means uniform, for dense cellular areas existed side by side with myxomatous areas, and there were a few giant cells and lymphocytes to be found. The metastatic deposits showed the same characters. The tumour was successfully transplanted into other fowls of the same breed, and had reached its fourth generation when the paper was written. The tumours were always progressive, had the histological characters of the original, gave rise to metastases, and proved fatal to the fowls in thirty-five days. Brebner further states that he repeated the experiments, using extract of guineapigs' instead of rabbits' placentæ, and has produced similar tumours in six cases. So far he has not succeeded in propagating these tumours by filtrates or by desiccated material as in the case of the Rous sarcoma, but otherwise these fowl tumours are of a similar nature. No doubt this new observation will be thoroughly investigated by others; if it comes successfully through the test it will throw some light on the nature of the agent causing these peculiar chicken tumours, and, incidentally, it will remove the foundation on which Gye's theory was constructed.—*British Medical Journal.*



PROFESSOR JOHN T. SHARE-JONES, M.Sc., D.V.Sc., F.R.C.V.S.,
President of the Royal College of Veterinary Surgeons, 1928-29.

husbandry so much depends, a Contagious Diseases of Animals Act is recommended.

(5) Muktesar is to remain the centre of veterinary research, is to be removed from the jurisdiction of the Agricultural Adviser to the Government of India, and its research activity is to be supplemented by research carried out at provincial veterinary schools.

(6) The system of veterinary hospitals and dispensaries, whereby more intelligent treatment of sick animals can be effected and advice given, is to be perfected.

(7) Veterinary services, so far as Provinces are concerned, are to be autonomous; that is to say, are not to be made subservient to, or an appendage of, another service.

It will thus be seen that the measures proposed mark a great step in the progress of veterinary science in India, and one for which we, as a profession, are very grateful to the members of the Commission. The Report, on the whole, shews a careful and a broad-minded handling of the subjects that were before the Royal Commission.

Looking at it, however, from the broad basis of complete and practical administration in which a veterinary service worthy of such a name is presumed to be, or ought to be, expert, we take leave to disagree with the Commission in its finding that it sees no necessity for the creation or revival of a superior Veterinary Head to so responsible and admittedly important and, we may add, essential a service proposed in augmentation of that already existing. Surely, the large increase of personnel recommended, the co-ordination of services and effort between Provinces and in relation to Indian States necessary for the control of disease, research into disease, and the progress of veterinary science in the country as a whole, point to and even demand that there should be a directing and controlling Veterinary Head. We are quite aware that veterinary matters belong to subjects transferred to Provinces, and that Provinces are responsible for veterinary administration and executive duty within their own areas, but unfortunately contagious animal disease in India knows no bounds, and limitation of the movements of stock to their own Provinces is out of the question. Placing the destinies of a service, and the important questions involved in true expert veterinary advice, under a sub-committee of an Agricultural Research Council at the Government of India Headquarters—none of the members of which have any veterinary qualifications — is, in our opinion, entirely wrong; and we may even go further and say that it amounts to professional injustice. It is quite improbable that the chairman will have the dual animal husbandry and veterinary qualification, unless he is specially selected for such, and the proposal to co-opt a veterinarian as occasion demands will not fill the bill. It is the one feeble link in the chain of measures which are calculated to effect the complete control of disease in India and the consequent improvement of its livestock.

Royal College of Veterinary Surgeons.

PROFESSOR SHARE-JONES AS THE NEW PRESIDENT.

At a meeting of Council of the Royal College of Veterinary Surgeons held at 10 Red Lion Square, W.C.1, on Friday, July 6th, the election as President, in succession to Lt.-Col. J. W. Brittlebank, was made of Professor John T. Share-Jones, M.Sc., D.V.Sc., F.R.C.V.S., Director of Veterinary Studies and Professor of Veterinary Anatomy at the School of Veterinary Science, University of Liverpool. A full report of the proceedings at the meeting at which his election took place will be published in an early issue of the *Record*. In the meantime, we hasten to offer to the new President our heartiest congratulations on his election, after sixteen years' service on the Council of the Royal College, as the titular head of the profession.

BIOGRAPHICAL NOTES.

Born at Cefn, North Wales, Professor Share-Jones was educated at local schools, and King's College, and University College, London. He received the whole of his professional training at the Royal Veterinary College, London, qualifying in July, 1900, and taking his Fellowship in 1907.

Dr. Share-Jones' scholastic career was one of outstanding merit, for he gained distinction in a great number of subjects, including Junior Anatomy (1st place and medal), Senior Anatomy (1st place and medal), Physiology (1st place and medal), Histology (medal), Stable Management (1st place), Surgery (medal), Public Health (1st place at Final M.B., Part II). Having achieved the honour of Centenary Prizeman, he was the first in Britain to take the degree of Doctor of Veterinary Science.

His principal researches have been in Surgical Anatomy, the Comparative Anatomy of the Ungulata, systems of Education in different countries and the problem of National Insurance in relation to Animals and Public Health. His degrees of Doctor (in Applied Science) and Master (in Pure Science) both required research work.

In 1901 he succeeded Mr. A. C. Wild as Demonstrator of Anatomy at the Royal Veterinary College, which position he held until 1904, when he was selected on the recommendation of Sir John M'Fadyean and Professor Shave to take charge of the subject of Veterinary Anatomy, which was to be created a Department in the University of Liverpool. He was entirely responsible for the organisation of this new department.

In 1906 he was requested by the University Council to act as Secretary of the Veterinary Board, and to perform the Administrative duties of the school as a whole. In 1917 the Council created the position of Director in the Veterinary School, and elected Dr. Share-Jones to it.

In 1919 the University founded and endowed the Chair in Veterinary Anatomy—the first endowed Veterinary Chair in a British University. Upon such occasions it is customary to make an open appointment, but the Council, on the recommendation of Senate, decided to proceed by invitation, and extended the invitation to Dr. Share-Jones. He has done much to contribute towards the extension of the influence of the University by engaging in public work and taking part in public activities outside the University, particularly in the North Wales and Cheshire Areas—the principal duty of the Directorship being that of public representative of the School.

The newly-elected President of the College has given evidence before several Royal Commissions and Departmental Committees, on Education and Agriculture, with special references to Wales, and was the first in this country to propose that Agriculture should be accorded a Faculty to place it on a plane with Art, Science, Medicine, Law, etc. This was before Lord Haldane's Royal Commission, before which he also proposed that Animal Husbandry and Veterinary Science should be given a Faculty. This was also the first time Animal Husbandry had been so dealt with in this country. His advocacy of Animal Husbandry as against Wheat Production, and his

work for the National Insurance of Live Stock, have brought him prominently into public and political life, and he has on several occasions been approached to represent the Liberal interest as a candidate for Parliament.

Amongst his many local activites, his work as Chairman of the Health Committee, Wrexham District, deserves special mention. This is one of the largest bodies of its kind in Britain. There are over fifty members controlling 100 square miles—practically the whole of the North Wales coalfield. In the area there are fifty-seven abattoirs. The Committee controls a large Staff, including M.O.H., two Veterinary Officers, four Sanitary Officers, etc., and Professor Share-Jones has been re-elected Chairman on fifteen consecutive occasions.

Professor Share-Jones' literary activities have been great, and he rendered valuable service to veterinary journalism as Editor of *The Veterinary News* from 1914-18. His publications number over 50, and amongst the most important are "The Surgical Anatomy of the Horse," in four volumes; "Veterinary Science," 1910-25 (*The Encyclopædia Britannica*, Vol. 3. Ed. xiii); "Local Authorities and Animal Diseases"—a paper delivered before the International Congress on Public Health at the University of Bordeaux; "Animal Husbandry—Meat Production and Inspection,"—a paper delivered before the Executive Council of the Meat Traders' Federation, in London; "Medicine and Veterinary Science—Tuberculosis, Leukemia and Arterio-Sclerosis," presented before a joint meeting of the North Wales Division of the British Medical Association and National Veterinary Association at Chester and published in *The Veterinary Record*, and other papers, in 1926; "Medicine and Veterinary Science, with a Plea for a National System of Live Stock Insurance as an Instrument in Preventive Medicine,"—delivered at the International Congress on Public Health, at Ghent, May, 1927; "Higher Agricultural Education in Wales—Agronomy, Horticulture and Forestry, Animal Husbandry and Veterinary Science" (1914); "The Education of the Veterinary Student,"—given before the International Congress on Public Health at the University of Brussels (1920); "Faculties of Agriculture and Animal Husbandry and Veterinary Science,"—evidence before Lord Haldane's Royal Commission on University Education in Wales on behalf of the County Councils of Denbighshire and Flintshire (Blue Book Reports of Commission, 1918); "Our Indebtedness to Switzerland and Pestalozzi,"—delivered before the Congregation of the University of Berne on the twenty-fifth anniversary of the institution of the first Autonomous Faculty in Veterinary Science. (1926).

This brief outline of the life and work of the new President would be still less complete without some reference to Mrs. Share-Jones, to whom he owes much. Mary Selena Share-Jones graduated in Arts at London University, with honours, and then turned to the study of Law, in which, as a woman, she was a pioneer. She graduated LL.B., with First-class Honours. Women were not then allowed to be called to the Bar, so she turned to Medicine and graduated Bachelor of Medicine and Bachelor of Surgery. She is now engaged in Maternity and Child Welfare work, and has published papers on this subject in this country and on the Continent.

Personal.

Appointment. Mr. J. A. M. Hughes, M.R.C.V.S., D.V.S.M., a graduate of the Dublin Veterinary College, a native of Omagh, has been appointed Veterinary Inspector to the Corporation of Birmingham.

Horse Riding on Roadside Margins.

The National Horse Association announces that, after careful inquiry, it has been credibly informed that all the land between fences acquired for the new roads is dedicated highway, and therefore the roadside margins are just as free for the use of horsemen as is the like accommodation upon the older roads.

CLINICAL AND CASE REPORTS.

Anthrax in Man (Malignant Pustule).

By Henry Taylor, F.R.C.V.S., Hayward's Heath.

A young man, member of a firm of knackers, one day recently noticed a pimple on his wrist which gradually became more and more inflamed and caused a good deal of systemic disturbance with a temperature of about 102°. At this time the centre of the inflamed area, the result of the extension of the pimple, had become black and its periphery had several small vesicles or blisters. The arm itself was painful and he consulted his medical man, who, after a consultation and having his occupation in mind, sent him to the hospital. Here a microscopical examination of the lesion was made, the patient put under an anæsthetic and the part excised. The operation was a serious one and at one time the surgeon had an anxious period, but he came through all right. Then he had a course of about a dozen injections of serum. Later on, as the site of the operation became gradually filled up, skin grafting was practised.

With regard to the origin of the disease, the young man was in the habit of putting his hand through the elliptical handle of an iron hook used in the performance of his duties and swinging it round his wrist. He remembers it making a "graze" at one place which proved to be the spot where the anthrax germs gained entrance. The infected blood which gave rise to the disease is in doubt, but suspicion attaches to a cow which was found dead, because for a few days before and a few days after this was the only carcase of a *dead* animal which had been handled, all the rest being carcases from horses and cattle which had been *killed* for one reason or another and were consequently not at all likely to have had anthrax, but there is no proof that it was the one. There is one point worth noting about the period of incubation. It was on a Friday that the carcase of the cow above mentioned was manipulated, and it was the following Tuesday, *i.e.*, four days after, before anything alarming developed and he went to the doctor about it. Unfortunately I cannot consult many medical books at the moment of writing about the time which elapses from the entrance of the germs to the onset of symptoms, but it appears to be from a few hours to the following day.

Some Notes on Louping-ill.

By J. M. Hughes, M.R.C.V.S., D.V.S.M.
City of Birmingham Veterinary Department.

On perusing some notes made on interesting cases when in practice at Oswestry, I came across a few jottings made on a few cases of the above disease. I have put these together for the interest and benefit of country practitioners who will meet the condition more commonly than I will in future.

A local butcher purchased four ewes, with lambs at foot, on a Wednesday. The ewes were in poor condition but he believed they were healthy enough and "had good eyes." He put them out on a paddock and on looking over his stock in the evening he noticed two of these ewes dull and drowsy. He had had some trouble with fluke

previously and so concluded this was the cause of the condition. Late that night he called at our surgery and had some mixture for them, a dose of which he administered at once. The following morning he reported all four ewes were down and looked like dying, but being close at hand and being interesting cases he desired them to be visited. I called to see them about 10 a.m. Thursday morning and found three of them to show approximately the same symptoms. Each ewe was down flat on its side and looked remarkably like a cow in an advanced stage of milk fever. There was a discharge of greenish ingesta at the nostrils. The eyes were partly closed and the corneæ dull and lustreless. The vessels on the sclerotic showed up prominently, in contrast with the eye of a sheep with advanced distomatosis. Corneal reflex was almost absent, as was also peripheral reflex. When propped up on her brisket the ewe would revert in a lifeless manner to her original position. The head could not be supported and one would say she was dead bar the breathing. The temperatures of these three ewes varied from 100-102°F., the pulse was weak and respirations shallow. The fourth ewe presented somewhat different symptoms. She lay normally and looked scared, as sheep do when a dog approaches. When raised to her feet she could support herself but trembled violently, especially over the fore quarters. She showed a strong inclination to step backwards, at other times she raised her forelegs as if she attempted to climb an imaginary wall. When turned she collapsed and tried vigorously to rise. The temperature of this ewe was 104°F. I had some experience of this condition when a student with Mr. H. Begg, senior, which enabled me to form a diagnosis of louping-ill. The owner was satisfied when I called it " tremblings," but he also satisfied himself that the best thing to do was to have them removed to the knacker's yard. I realised that now was my chance to put to the test the inflation theory. This line of treatment, some of my readers will know, was strongly though silently advocated by that observant and very practical veterinary surgeon, Mr. H. Begg, junior, F.R.C.V.S., D.V.S.M., Strathaven. I fitted a very small teat siphon to a milk fever syringe and injected each ewe's udder with air mixed with æther vapour and tied the teats with tape.

I then left the owner, who seemed amused at my actions. However, he went back in the evening for my information and was surprised to find three of the sheep had changed positions. Two of them were with the rest of the flock and he would not have known them except for the tapes on their teats. Another was on her feet with her hind quarters resting against a tree. She was unsteady and trembled. The fourth ewe lay in the same position as she was originally. I returned to the field that night and re-injected the udders of the last two ewes. One died during the operation and the other was all right by morning.

I consider three out of four a very good percentage of recoveries, considering the advanced condition they were in, and it might conceivably have been 100 per cent. recoveries had I taken action earlier. Anyhow, this goes to prove that it is well worth a practitioner's time to carry out this simple treatment should he encounter it, as it is often the case that large numbers of a flock are affected at the same time.

Variation of the Classical Traumatic Pericarditis.*

By R. A. S. Macdonald, B.Sc., M.R.C.V.S.,
Veterinary Research Officer, Northern Rhodesia.

An eight-year-old pure-bred Aberdeen Angus bull was destroyed on humanitarian grounds in July, 1927. Six months prior to the date of destruction abnormalities had been noted. The bull became a very intermittent feeder and would lie down on the pasture for an hour or two on end, during which time rumination entirely ceased. In the mornings and evenings, when stabled, he would eat and ruminate normally. Naturally he lost condition but did not become really thin until a month prior to destruction. From that time onwards he became progressively thinner and weaker until, during his last three days, he only rose with an effort, and moved with a dragging gait. During the period of progressive emaciation the bull showed dysnpœa, but only from time to time—frequently his breathing was quite normal. Pulsation of the jugular veins on either side was almost constant and this, combined with the markedly allorhythmic nature of the pulse and the apparent absence of any lung lesions on auscultation, led one to a tentative diagnosis of lesions of the heart valves. The final picture was as follows :—

(*a*) Animal lying continuously, with left foreleg unnaturally extended.

(*b*) Complete inappetence.

(*c*) Temperature normal, eyes normal, fæces normal, urine normal.

(*d*) Membranes anæmic.

(*e*) Pronounced pulsation of jugular vein of the left side and fainter pulsation on the right. Pulse quite strong but completely allorhythmic.

(*f*) Frequent clonic spasms of the left foreleg and shoulder region and ultimately of the right fore-quarter also.

(*g*) Occasional periods of dyspnœa lasting fifteen minutes.

(*h*) No perceptible abnormality on auscultation of the lungs—heart sounds conveyed no information on auscultation owing to thickness of hide and thoracic wall.

On autopsy the carcase was emaciated, body fat normal, all viscera and glands quite normal except as undernoted :—

(*a*) Reticulum—contained two pieces of ordinary baling wire, one four inches long and the other shorter. The wall of the reticulum was carefully examined for a perforation but none was found. There was, however, a small area of reticular mucous membrane which appeared somewhat desquamated and which might have been (and probably in actual fact was) the site of a healed perforation.

(*b*) Liver—multiple abscesses.

(*c*) Kidneys—multiple abscesses and in one kidney a gangrenous area involving the hilus.

(*d*) Heart—actually encysted in the musculature of the left ventricle of the heart was a gangrenous sequestrum containing a fragment of jagged, semi-macerated bone measuring about an inch each way.

(*e*) There was no pericarditis, and the pericardial fluid was clear and normal in quantity. There was no

* Extracted from the Annual Report, Veterinary Department, Government of Northern Rhodesia, 1927.

endocarditis. There was no evidence on the exterior of the heart wall as to the point of entry of the foreign body. The hypothesis is that the bull, being a voracious and indiscriminate feeder, had ingested a jagged fragment of bone which passed rapidly through the wall of the reticulum, the diaphragm and the pericardium and penetrated the wall of the heart, where it was gripped and held by the contracting musculature. At first the foreign body in the heart caused little functional disorder, but after a period of months, and with the extension of the gangrenous process, the action of the heart was so disturbed as to exhibit the symptoms above described. The multiple abscesses in the liver and kidneys may have originated in a trauma of the liver by the fragment of bone or by baling wire, or they may have been metastatic—originating from the primary septic process in the heart wall. The case must be regarded as an interesting variation of the classical traumatic pericarditis.

Value of the Double Intradermal Test for Tuberculosis.*

By Mr. R. A. S. MACDONALD, B.Sc., M.R.C.V.S., Veterinary Research Officer, Northern Rhodesia.

A three-year-old Friesland cow was destroyed in June, 1927, having reacted to the Double Intradermal Tuberculin Test. This animal was imported from the Union of South Africa in March, 1927. It was tested in the Maramba Quarantine Area by the Subcutaneous Tuberculin Test on 25th March, 1927, when it showed a perfectly negative chart. Nevertheless it showed a markedly positive reaction when re-tested for experimental purposes by the Double Intradermal method on 17th—20th May, 1927. The cow was in good condition. It was destroyed and an exhaustive *post-mortem* examination performed. The only evidence of tuberculosis found consisted of several active lesions in two small bronchial lymph glands. The nature of the lesions was confirmed by microscopic examination and guinea-pig inoculation. One is fairly safe in assuming that the cow did not become infected in Northern Rhodesia during the interval of less than two months between the two tests, and that she was actually, though very slightly, infected when she passed the temperature test at the end of March. Her reaction to the Double Intradermal Test fifty-five days later was very pronounced. This case would appear to be an example of the superior diagnostic value of the Double Intradermal method in tuberculin testing.

COLONEL BRITTLEBANK AND THE EX-SERVICE MAN.

"Colonel Brittlebank is one of the most popular officials in the city," says a writer in the *Manchester Evening Chronicle*. "He has friends everywhere, and in all classes. He went through the war as a colonel, and has a particularly warm place in his heart for ex-Service men, many of whom consult him from time to time about horses they want to buy, or which have been offered to them, to enable them to set up in business.

"The chief veterinary officer takes the greatest care that they are not swindled, and has several times prevented a 'dud' horse being foisted on to an unsuspecting ex-soldier."

* Extracted from the Annual Report, Veterinary Department, Government of Northern Rhodesia, 1927.

ABSTRACTS.

[RABINOWITSCH-KEMPNER, L. **The Transmission of Tuberculosis through Domestic Animals.** *Amer. Rev. Tuberculosis.* 1927, v. 15, 419-428. Ex. *Bull Hyg.*, vol. 3, No. 3.].

This is a general account of the relationship existing between tuberculosis in man and tuberculosis in cows and food animals. Direct infection from animals to man is an established fact; but the author believes that it is not impossible for the biological properties of the various types of bacilli to alter while in the human body—the bovine becoming converted into the human. Infection by meat is not common and the greatest danger is from milk, although phthisical people must still be regarded as the principal source of infection. It is not impossible that dried bovine and avian bacilli can be inhaled with dust along with the human bacilli. From experience, the author states that even pasteurising milk may not render it safe and that nothing but boiling can be depended upon definitely to kill the organisms—even then they may live in the scum.

THE THERAPEUTIC VALUE OF THE SUPPOSITORY.

The suppository presents an ideal and most rational means for the administration of water-soluble drugs when a prompt reaction is desired. The lower para-sphincteral region of the rectum, with its numerous anastomotic vessels, affords an absorptive surface from which soluble substances rapidly pass directly into the venous circulation. Rectal administration, when confined to the lower portion of the bowel, as when suppositories or very small enemata of 10 to 15 c.c. are given, acts almost as promptly as intravenous injection. This para-sphincteral absorption differs pronouncedly from that following hypodermic or intra-muscular injection, which occurs only by way of the lymphatics. Moreover, when the rectal route is followed, the drugs administered are not modified by the action of the gastic secretion, as may occur when they are given by the mouth. Also any disturbance of the gastric digestive function is obviously avoided. The fatty basis of the suppository has advantages for the administration of hydro- and lipo-soluble substances. It enables a double absorption to be effected: venous and lymphatic. The first reacts on the whole system, the second is strictly local. This explains the value of anæsthetic and analgesic suppositories such as those of hypnal, in the manipulations and minor operations of gynecological practice.—(*Bull gén. de Thérapeut.* 1928, *179*, 38).

ANTI-RABIC ACTION OF SNAKE VENOM.

Madame Phisalix has previously demonstrated that the venom of the southern viper, *Vipera aspis*, associated with the mucus of certain batrachians, confers on rabbits, when they are inoculated therewith, immunity to the virus of rabies, even when the latter is introduced intra-cerebrally. The venom of the viper and of batrachians is rabicidal or preventive *in vivo*. In either case the blood of the vaccinated animals also acquires anti-rabic properties. The

(*Continued at foot of first column next page*).

International Veterinary Congress.

MEETING OF THE PERMANENT COMMITTEE.

A meeting of the Permanent Committee for International Veterinary Congresses was held on Monday, 14th May, at 41 bis Rue de Bourgogne, Paris. There were present, Sir John M'Fadyean, Professor Hutyra, Professor Lignieres, Dr. De Blieck, Dr. O. Charnock Bradley, Messrs. Jonescu-Braila, Burgi, Halfdan-Holth, Kasper, Leclainche, Petrovitch, Stang, J. Hamr, Professor A. Cuica and Professor Fr. Sévcik.

Dr. Hutyra, the only remaining representative of the office bearers, was elected to the Chair.

Apologies for absence were received from Messrs. Hebrant, Van Es, Jensen and Kjerrulf.

Professor De Blieck, as interim Secretary, reported that of the Members of the Committee elected in 1914, twelve were still alive, but the following had sent in their resignations: Messrs. Bang, Barrier, Perroncito, Piot Bey, Popovitz and Theiler. Only six, therefore, of the former Committee remained in office, namely, Messrs. Hutyra (Hungary), Van Es (U.S.A.), Kjerrulf (Sweden), Lignieres (Argentine), Sir John M'Fadyean (Great Britain), and Tuleff (Bulgaria), and as Sir John M'Fadyean sat as President of the former Congress, really only five nations were represented. The following nominations had been received from the governments of the countries named:—

South Africa.—Dr. J. P. Du Toit, Director of Veterinary Services, Pretoria.

Germany.—Dr. Stang, Professor at the Veterinary High School, Berlin.

Great Britain.—Dr. O. Charnock Bradley, Principal of the Royal (Dick) Veterinary College, Edinburgh.

Austria.—Karl Kasper, Director of the Government Veterinary Dept., Vienna.

Belgium.—Dr. Hebrant, Rector of the State School of Veterinary Medicine, Cureghem.

Canada.—Dr. George Hilton, Veterinary-Director-General, Ottawa.

Denmark.—Dr. C. O. Jensen, Professor of the Veterinary School, and Chief of the Veterinary Service, Copenhagen.

France.—Professor E. Leclainche, Chief of Government Veterinary Services, Paris.

Italy.—Professor Dr. Sartirava, Provincial Veterinarian, Turin.

Norway.—Professor Halfdan-Holth, Chief of the Veterinary Institute, Oslo.

Holland.—Professor Dr. L. De Blieck, Director of the Institute of Parasitic and Infectious Diseases of the State University, Utrecht.

Roumania.—Georges Jonescu-Braila, Director-General of Zootechnic and Veterinary Services, Bucharest.

Switzerland.—Professor Dr. M. Burgi, Director of the Government Veterinary Services, Bern.

Yugo Slavia.—Cyrille J. Petrovitch, Veterinary Inspector, Ministry of Agriculture, Belgrade.

These names had been submitted by post to the existing members of the Committee, who had agreed to their election. The following nomination, received from the Government of Czecho-slovakia, was approved—J. Hamr, Head of the Veterinary Department of the Ministry of Agriculture, Prague.

The following officers were elected:—

President.—Professor Hutyra.

Vice-Presidents.—Professor E. Lechlainche, Sir John McFadyean.

General Secretary and Treasurer.—Professor Dr. L De Blieck.

Assistant Secretary.—Professor Dr. Stang.

Place of next Congress.—Sir John M'Fadyean submitted an invitation from the British Organising Committee to hold the next Congress in London. The Secretary stated that in view of the fact that in 1914 it could not, properly speaking, be said that a real Congress was held, and as the Organising Committee had a large sum of money in hand, it would be advisable to hold the next Congress in London. The Organising Committee was still in existence and, profiting by its past experience, it would be able to organise a Congress in a very short time.

Professor Leclainche expressed the fear that in view of the low rate of exchange in different countries, it would be difficult for veterinarians of those countries to attend a Congress in London, and he therefore proposed that the next Congress should be held in one of those countries. On a question raised by M. Braila, Professor Leclainche said he would propose that the next Congress be held in Paris. Sir John M'Fadyean remarked that the cost of living in Paris was in fact very little cheaper for foreigners than in London. Moreover, the Organising Committee would undertake to find members suitable accommodation at reasonable prices.

Professor Lignieres requested the Organising Committee to endeavour to obtain a reduction of railway and steamship fares to the Congress, and Sir John promised that this would be attended to.

It was then decided that the next Congress should be held in London, and in the year 1930, since it requires at least one year's preparation, and the writers of papers need that time to prepare their contributions. It was agreed that the month of August was the most convenient.

Under Byelaw 6 (e) two veterinarians of the country in which the Congress is to be held may sit on the Permanent Commission, and Sir John M'Fadyean proposed Lt.-Col. J. W. Brittlebank, and Dr. F. C. Minett. This was seconded by Dr. Bradley, and adopted.

The desire was expressed by the meeting that the Organising Committee, in consultation with the office of the Permanent Commission, should prepare a provisional agenda and that this be issued as early as possible to the members of the Committee in order that they may, within a stipulated period, add any proposition of their own. A further

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(*Continued from previous page.*)

author now shows that viper venom, when heated to the temperature of 100°C. for ten minutes, which totally destroys its toxicity, retains its rabicidal potency, unimpaired *in vivo* and also *in vitro*. This proves that the toxic principle in the venom is quite distinct from that which has the anti-rabic effect. Madame Phisalix (*L'Union Phar.*, 1928, *64*, 200).

meeting of the Committee to be held in May, 1929 to settle the Programme of the Congress.

Professor Stang remarked that it would be desirable to form national committees and it was agreed that the members of the Permanent Committee would form these in their respective countries.

Professor Leclainche suggested that the Organising Committee should restrict the number of subjects to be discussed to those which are most important. At previous Congresses the number of papers had been much too many. He also submitted that at least one paper should be given on a subject of immediate interest to the profession. It would, for instance, be of great importance if the Congress could give a pronouncement on the law governing the exercise of Veterinary Medicine, for the profession was not in all countries sufficiently protected in this respect.

Professor Lignieres spoke in support of this suggestion and emphasised the great importance the subject had for South America. The recommendation was therefore adopted.

M. Braila suggested that if the same subject was selected by contributors from different countries, one member should be appointed to give a resumé of all the reports during the sittings of the Congress, so that time might be saved. This also was agreed to, and after votes of thanks to M. Leclainche for his hospitality, the meeting terminated.

DIVISIONAL REPORT.

Yorkshire Division.*

A General Meeting of this Division was held at the Hotel Metropole, Leeds, on Friday, 27th April, 1928, with the President, Mr. W. Ackroyd, in the Chair. There were also present: Messrs. A. McCarmick, T. C. Hall (Hon. Secretary), Gentle, Ellison, Campbell, Bowman, Clarkson, Bowes, Secker Smith, Robinson, Pratt, Rabagliati, Dixon, Barber, Scott, Elliott, Vine and MacGregor.

Visitors.—Messrs. Bolton and Richards.

The *Minutes* of the last meeting (having been already published in the *Veterinary Record*) were taken as read and were confirmed.

Apologies for non-attendance were received from Professor Bradley, Messrs. Carter, Abson, Noel Pillers, Hamilton and McKinna. It was agreed that a letter be written to Mr. McKinna regretting his inability to attend owing to illness, and hoping for his speedy recovery.

The PRESIDENT said that since the last meeting Captain Daniel Hamilton, of Harrogate, had sustained a great loss, his wife having died. It was agreed that a note of sympathy be sent to him.

Dealing with the official correspondence, the President said that the "National" Association were pressing the members and the Divisions to forward clinical reports as often as possible, as it was essential for the success of the periodical, and also for the success of the profession, that they should do so. He hoped the members would send in reports of cases that might prove interesting.

A letter had been received from the Professor of Experimental Pathology and Director of Cancer Research. It was an important subject which was being dealt with in the Yorkshire Centre in a very thorough and exhaustive manner. The Yorkshire Centre was remarkably well endowed with money, and had got together a fine staff, but they needed material.

Mr. CLARKSON said it was most essential that they should collaborate in the work of research in connection with cancer.

Colonel BOWES agreed, and said he had intended to raise the question had it not been brought before the meeting. It was the duty of every practitioner who got a case where there was a possibility of a malignant growth to furnish material for this research work.

On the proposition of Mr. ELLISON, seconded by Major RABAGLIATI, it was agreed to reply that the Society would support the cancer research work in every possible way.

Mr. J. C. Ross (Wakefield) was elected a member, on the motion of Colonel BOWES, seconded by Mr. MCCARMICK.

A resolution standing in the name of Mr. Pollard (who was not present) was moved by Colonel BOWES:

> "That a member of the Yorkshire Veterinary Medical Society who is on the Council of the Royal College of Veterinary Surgeons, shall automatically become a member of the Council of the Yorkshire Veterinary Medical Society."

Mr. MCCARMICK seconded, and the resolution was carried.

Mr. E. H. PRATT (Northallerton) then read a paper on "Should the Government Subsidise the Tuberculin Testing of Cattle?"

The paper was followed by an interesting discussion.

[Both are reproduced earlier in this issue of the *Record*.—Ed.]

A vote of thanks to Mr. Pratt, proposed by Mr. CLARKSON and seconded by Major RABAGLIATI, was carried with acclamation.

T. C. HALL, *Hon. Secretary.*

* Received on 21st June, 1928.

A Warning Notice.

The following circular, which has been widely circulated amongst veterinary surgeons, has been brought to the notice of the Council of the R.C.V.S. and of the N.V.M.A.:

L. SMITH & SON,
Insurance Brokers,
Investment Agents,
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and Small Holdings
Specialists, etc.

112 Gillott Road,
Edgbaston,
Birmingham.

Dear Sir,—Having consulted several country veterinary surgeons, and also our own solicitors, we have decided to form what may be termed a Farmers' Veterinary Union. We shall appoint one qualified veterinary surgeon in various market towns and districts in the Midlands to do absolutely all the veterinary work for as many farmers as we can induce to join his panel, within a radius of, say, eight to ten miles. Each farmer will be charged a premium in proportion to the approximate number of various animals in his possession, and it is expected that each veterinary surgeon will be able to adequately serve 400 farmers.

Kindly let us know, as soon as possible, whether you will accept the appointment for your District, and on what basis of remuneration. We suggest 75 per cent. of the premiums we receive—the remaining 25 per cent. being mostly swallowed up in agent's commission, advertising, office expenses, etc.

You will not fail to realise the distinct advantage to yourself, seeing that you will receive a cheque in each case immediately we get the farmer's annual premium—doubtless an agreeable contrast with your present system of having to give long credit—whilst, on the other hand, the farmer will doubtless appreciate having no more to pay than his annual premium, no matter how unfortunate may be his experience.

We enclose an imaginary Statement of what is, perhaps, that of an average farm, showing how we arrive at the premium, and shall be glad to know whether you consider the proposed premium would be about fair.

Yours faithfully,
L. Smith & Son.

Imaginary Stock of Average Farm.

20 cows at 1d. each per week, per year	...	£4	6	8
20 Sheep at ½d. „ „ „	...	2	3	4
5 Calves at 1d. „ „ „	...	1	1	8
3 Horses at 3d. „ „ „	...	1	19	0
		£9	10	8
Cheque to Veterinary Surgeon =	...	7	3	0
Agent's Commission, etc. =	...	£2	7	8

. . . . .

Members are advised that the scheme outlined is one which is not likely to be in the interests of either farmers or veterinary surgeons. Moreover, to become associated with the scheme would be to commit an offence against the Byelaws of the College governing professional conduct, for it would be tantamount to canvassing for practice by means of an agent.

NOTES AND NEWS.

Diary of Events.

July 16th—Meeting of the Editorial Committee, N.V.M.A., 4-30 p.m.

July 20th—Meeting of the Mid-West and South Wales Division, N.V.M.A., at the Laboratories of the Ministry of Agriculture, Weybridge.
Meeting of the Lancashire Division at Blossoms' Hotel, Chester, at 3 p.m.
Meeting of the North Wales Division at Chester.

July 27th—Meeting of the Eastern Counties Division, N.V.M.A., at Bury St. Edmunds.

Serious Illness of Lady Moore.

We have received from General Sir John Moore, the Chairman of our Editorial Committee, a communication, written *en route* for Fishguard, informing us that he has been called over to Clonmel as Lady Moore has had to undergo an operation for acute appendicitis. The sympathy of every member of the profession will be extended to Sir John in this anxious time, and they will share our earnest hope that success has attended the operation, and that Lady Moore will be restored to a full measure of health and strength.

N.V.M.A. Congress Programme Corrections.

The attention of members is drawn to the fact that times fixed for the discussion of papers at the N.V.M.A. Congress at Newcastle-on-Tyne are as follows: *Mornings*, 10 a.m.; *Afternoons*, 2 p.m., and not as published in the programme reproduced in last week's issue of the *Record*.

Liverpool School of Veterinary Science.

Degree of B.V.Sc.

Final Examination. *Part II*, [3 4] Macdonald, J.

Third Examination. *Part I*, [1 2] el Fuad, S., [1] Mohamed, Z.; *Part II*, el Fuad, S., Mohamed, Z.; *Part III*, el Fuad, S., Mohamed, Z.

First Examination. *Part I*, Amos, Vera J. E. *Part II*, Amos, Vera J. E.

[1] Distinction in Veterinary Hygiene.
[2] Distinction in Dietetics.
[3] Distinction in Hygiene of Milk.
[4] Distinction in Toxicology and Jurisprudence.

R.C.V.S. Obituary.

Forrest, Ralph Leopold Christopher, Alcester, Warwickshire. Graduated, Liverpool, 17th December, 1907. Died, 9th June, 1928, aged 42.

Army Veterinary Service.

Home-station Examination.

Amongst the candidates who passed the March examination in written subjects at Home-Stations of officers, with a view to promotion, were the following R.A.V.C. entrants: Majors H. Kirby, D.S.O.; R. W. Mellard, D.S.O.; V. C. Leckie, D.S.O.; A. Hodgins, D.S.O.; E. Hearne, O.B.E.; and G. E. Tillyard; Capts. T. Hodgins and W. D. Connochie.

London Gazette. War Office. Regular Army.

Reserve of Officers.

June 29th—Major R. C. Matthews, D.S.O., having attained the age limit of liability to recall, ceases to belong to the Res. of Off. (June 30th).

Territorial Army.

Major W. A. Macgregor resigns his commn. (June 30th).

Territorial Army Reserve of Officers.

Lt.-Col. W. L. Harrison, C.B.E., T.D., F.R.C.V.S., having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform (June 30th).

The following appointments have been made during the month of June, 1928, by the Secretary of State for the Colonies:—Mr. W. W. Henderson, M.R.C.V.S., D.V.S.M. (Vict.), (Veterinary Officer, Nigeria) as Chief Veterinary Officer, Nigeria; Mr. F. H. Manley, M.R.C.V.S., B.S.Vc., (Veterinary Officer, Uganda) as Assistant Veterinary Pathologist, Nigeria.

In Parliament.

Dogs (Amendment) Bill.—The House of Lords, on Monday last, went into Committee on the Dogs (Amendment) Bill. On Clause 2, which enacts that a person who takes possession of a stray dog shall forthwith either return it to its owner or take it to the police station which is nearest to the place where the dog was found,

Lord Strachie moved to leave out the latter provision with a view of inserting a new paragraph (*c*) to the effect that the person should inform the police officer at the nearest police station by post that he had taken possession of the dog. He protested that the provision in the Bill would in some parts of the country entail a walk of as much as 15 miles on a person finding and taking possession of a stray dog. The object in view would be attained if the person informed the nearest police station through the post that he had such a dog in his possession.

The Earl of Cranbrook, who is in charge of the Bill, said that the amendment, if accepted, would destroy the whole value of the clause. It would enable a dishonest person to give an entirely inaccurate report to the police as to what sort of a dog it was that he had found and as to where he had found it.

The Earl of Stradbroke, Parliamentary Secretary to the Ministry of Agriculture, said that in the view of the Ministry it was not desirable that this amendment should be accepted. It would defeat the whole object of the Bill, which was to secure a proper description of the dog found being given to the police.

The amendment was by leave withdrawn.

. . . . . .

Slaughter of Animals (Scotland) Bill.—In the House of Lords on Tuesday last, Lord Balfour of Burleigh moved the second reading of the Slaughter of Animals (Scotland) Bill, which provides for the use of the humane killer in the case of cattle and sheep, and which has passed through all its stages in the Commons. He said the object of the Bill was to get rid, as far as possible, of all avoidable cruelty in the slaughter of animals for use for human food. There was now no longer any opposition to the slaughtering or stunning of cattle by means of the humane killer; it had been found that in their case humanity and convenience went together. In the case of sheep, the balance of convenience could not yet be said to be so greatly on the side of the humane killer, but those who were in favour of its use claimed that it was not sufficiently against them to prevent its introduction. With the perfection of the instrument and with greater practice it might be possible to introduce this method generally in the case of pigs, but for the moment pigs were excluded from the Bill.

The Duke of Buccleuch, who had a motion on the paper for the rejection of the Bill, said objection was taken to it by the Farmers' Union in Scotland. Swine were excepted from the Bill, and special exemptions were made to meet the requirements of Jewish and Moslem laws. If a Bill of this kind were to be passed, it ought to apply to every person, without exception. A large number of people maintained that the system of what was called humane slaughter was not satisfactory. Why should the Bill apply only to Scotland? If the new system of slaughtering was as satisfactory as those who advocated it claimed, it ought to be enforced in all parts of the country. The objection to the Bill, however, would practically disappear if the matter were left to local authorities.

The Duke of Sutherland, Paymaster-General, stated that the Bill was supported, in its main principles, by the Government and the Scottish Office.

The motion for the second reading was agreed to.

Progress of Cancer Research.

"The annual report of the Grand Council of the Empire Cancer Campaign carries the story of cancer research in this country a step forward," says the medical correspondent of *The Times*.

"Perhaps the most interesting single piece of information in the report concerns the work of Dr. Lumsden at the Lister Institute. Dr. Lumsden, as is well known, has succeeded in causing transplanted cancers in rodents to disappear by means of a process of vaccination. He has now succeeded, though only in a simple case, in causing the disappearance of a spontaneous cancer in a rat by the same means. These means are highly ingenious. Formalin is used to inflict injury on the cancer, and the injured cancer cells serve as an inoculation, and so call forth the natural powers of resistance. It has been found that once a tumour has been made to disappear the animal becomes immune to cancer and cannot again be infected with it.

"As was to be expected, the report deals at length with the work being carried on on the treatment of cancer by radium. This work becomes increasingly hopeful, though at present some areas of the body afford much better results than other areas.

"An ingenious use of cinematography has made it possible to watch the actual growth of cancer cells, and it is hoped that new light may be obtained from this device. The work at the Cancer Hospital on 'cancer-producing substances' proceeds, and is developing. There can now be no doubt that such substances exist. Such substances, moreover, can be produced artificially by various means. This work is full of promise."

H.M. Stationery Office Publications.

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery Office, at the following addresses:—London: Adastral House, Kingsway, W.C.2, and 28 Abingdon Street, S.W.1; Cardiff: 1 St. Andrew's Crescent; Manchester: York Street; Edinburgh: 120 George Street

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House of Lords Papers and Bills, 1928.	s. d.	s. d.
(83a) Dogs Act (Amendment) Bill. Amendments to be moved in Committee	0 1	0 1½
(88) Slaughter of Animals (Scotland) Bill to provide for the humane slaughter of animals in Scotland ...	0 2	0 2½
Command Papers.		
3132. Agriculture in India. Report of the Royal Commission	11 0	11 9
India Office.		
Agriculture in India. Abridged Report of the Royal Commission (70-0186-90-00)	1 6	1 8

The Reform of Bull-Fighting.

"By the terms of a Royal Order published in to-day's official gazette," says the Madrid correspondent of *The Times*, on June 14th, "a further reform is made in the conditions of bull fighting in Spain. The use of explosive darts is in future absolutely forbidden, the reason given being that their use is unnecessarily cruel, is repugnant to the majority of the spectators, and is of no benefit to the bull-fighter, as the powers of resistance of the bull are not affected thereby. The use of four pairs of ordinary darts is, however, to be permitted.

"By the same Order the regulation which makes compulsory the protection of all horses with a *cuirasse* is extended to bull-fights all over Spain. Bull-fighting in improvised rings where the public is insufficiently protected from the bull is also prohibited, and also the organising of gatherings for the purpose of bull-baiting. There have been two incidents in the last ten days where spectators have been seriously injured (in one case mortally) when watching a bull-fight in an improvised ring."

Australia and the Alsatian.

The Western Australian Canine Association has endorsed the report of a committee, the members of which have from twenty to thirty-five years' colonial and international experience with dogs, which recommends that the Alsatian wolf-dog should be prohibited from entering Australia on the ground of its long list of convictions in Great Britain as a ruthless sheep killer; that its intelligence does not exceed the cunning of the average crossbred dog; and that there is no useful canine function for the Alsatian in Australia.

Sheep-dog's Strange Habit.

A sheep-dog, belonging to Mr. E. O. Morgan, of Builth Wells, without having been trained in any way, has acquired the habit of leading the farm horses about by a halter, the end of which it takes in its mouth. The dog also assists the horseman in turning at the headlands when ploughing, by seizing hold of one of the long reins and marching round with him.

Experiments on Animals.

On June 26th, in reply to Mr. Maclean, Sir W. Joynson-Hicks said that in 1927 there were 13,871 experiments on animals with anæsthetics and 279,431 without anæsthetics. The latter class of experiments were mostly inoculations and feeding experiments, and in no case was an operative procedure more severe than simple inoculation allowed without an anæsthetic. In 1927 there were 253 places registered for conducting experiments in vivisection, and 1,230 persons were licensed to conduct them; 7,647 experiments were performed under certificate B (that is, where the experimenter is relieved from the obligation to kill the animal before it recovers from the anæsthetic). Of these, 583 were on cats and dogs.

CORRESPONDENCE.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.
All correspondence must bear the name and address of the contributor for publication.
The Editor does not hold himself responsible for the opinions of his correspondents

Urine.

To the Editor of The Veterinary Record.

Sir,—The paper given by Major Hamilton Kirk certainly evoked a most scientific discussion, which appeared to resolve itself into the formulation of a series of tests suitable for application by the practitioner, to supplement the clinical examination, and thus provide a succinct collection of facts for positive diagnosis.

From the discussion, however, the procedure appears hazardous when the equipment and technique of the practitioner are fully considered. The chemical analysis is not elementary and wrong deductions can easily occur; the pathological examination, when the observations of Dr. Minett are considered, appears to require the technique of the specialist, and the physiological variation must be taken into consideration for diagnostic purposes.

From Dr. Tom Hare's observation upon the demonstration of the tubercle bacillus in urine I should like to ask if the presence of this bacillus in urine would not, in the majority of cases, indicate tuberculous foci in the kidney? Would this not indicate generalisation or extensive abdominal lesions and a positive diagnosis be possible by clinical observation, the minority of such cases indicating tuberculosis of some other region of the urino-genital organs?

I should also like to ask, in this connection, if the tubercle bacillus can occur in the urine of apparently healthy cattle in a parallel manner to its presence as demonstrated in the fæces of apparently healthy cattle by the work of R. Stenhouse Williams and W. A. Hoy (*The Veterinary Record*, Vol. 8, No. 15, p. 292, 14th April, 1928, and Schroeder and Cotton (*Hutyra and Marek*, Vol. 1, p. 614)?

The former workers found a percentage of 1·53 for cattle so harbouring the bacillus. The latter definitely state that these animals are tuberculous. It would be interesting to know if such a percentage would fail to react to any of the tuberculin tests and thus such carriers exist in tuberculosis-free herds (tuberculin tested).

Are there enough data from published or unpublished work for a parallel case to exist for the presence of tubercle bacilli in the urine of apparently healthy cattle?—I am, Sir, yours faithfully, W. J. Cooper.

A Veterinary Pioneer in Clean Milk Production.

To the Editor of The Veterinary Record.

Sir,—In your own and other accounts of the opening of the new Grade A (T.T.) dairies at Tamworth there is one notable omission, and as this concerns the President of the Royal College of Veterinary Surgeons, and the subject is a matter for congratulation to our profession as a whole, I venture to quote Dr. Stenhouse Williams, as follows:—"There is one man here who is a much longer pioneer in all this work than I am, and that is Colonel Brittlebank. I would like to remind you that there is, perhaps, no other man who did more to help along clean milk work in the days when there was nothing like the support given to it that I receive. Colonel Brittlebank was the fortunate person who had enough sense to know that if you wanted to know something about a job you must work at it, and not talk. My institution happened to come along at a psychological moment, as is so often the case in these days. We might have done all the work in years gone by and have gone to our graves and seen no results. Colonel Brittlebank did all he could to help the farmer to get his herd in the best condition for many long years in the days when things were very difficult, and the amount of support he got in this work must have been very small."

Coming from the Director of the National Institute for Research in Dairying, I consider this a very valuable tribute to the veterinary profession.—Yours faithfully, H. W. Steele Bodger.

Tamworth,
8th July, 1928.

The Royal Veterinary College.

To the Editor of the Veterinary Record.

Sir,—I was pleased to see in the *Veterinary Record* of the 7th July that Mr. Armfield has raised the question of the location of the new London Veterinary College, and my sympathies are with him in his endeavour to suggest some more salubrious and convenient centre for this institution.

The discussion of the advantages of living either in town or country is as old as towns themselves, and it seems, upon examination, that similar questions arise in connection with veterinary colleges.

May I suggest an alternative scheme, if it can be arranged? Namely, to give up the present site of the college for an open space for children in this overcrowded part of London and to receive, in exchange, a site in Regent's Park near the Zoological Gardens, where specimens of farm animals may be kept for view by visitors to the Gardens who, being mainly town dwellers, are almost as unfamiliar with the ordinary farm animals as they are with foreign and wild specimens.

This scheme would, I suggest, afford opportunities of comparing domesticated with wild faunæ, and also be of very great use for veterinary students. In addition, specimens of wild animals would be conveniently situated for study by students and cases of diseases amongst them being, I understand, frequent, would also be available.

In this suggested new position the London Veterinary College would not be hidden away as it now is. I doubt whether one London resident in a thousand knows where the present veterinary college is located; whereas on the Continent, in the principal towns where veterinary colleges exist, most people are familiar with them. They are in prominent positions and all have plenty of room with detached buildings amongst avenues of trees, paddocks, and suitable uncramped surroundings.

"Hide not your light under a bushel"—or in any remote corner of London.—Yours truly, W. S. Stevens.

West End Farm, Aldershot.
10th July, 1928.

The Editor acknowledges the receipt of the following:—

Annual Report of the Veterinary Department of the City of Edinburgh for the year 1927, by Mr. Arthur Gofton, F.R.C.V.S., Chief Veterinary Inspector.

Report of a meeting of the North Midland Division, N.V.M.A., from Mr. J. S. Lloyd, Hon. Sec.

Communications from Messrs. W. A. Dickinson (Crewland), T. Dalling (Beckenham), F. S. Ringwood (Enniscorthy) and Professor J. McCunn (London).

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